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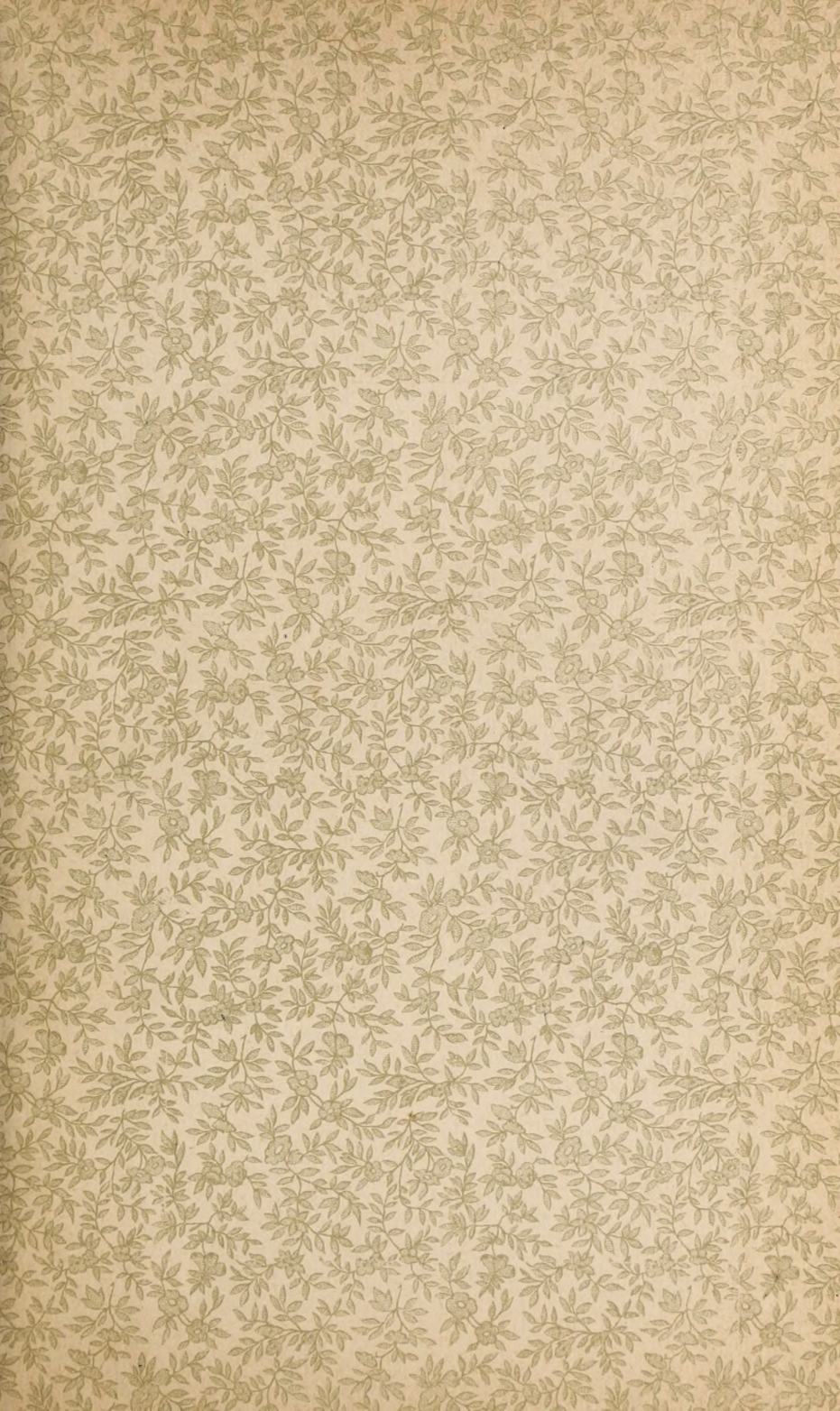
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BROOKLYN MEDICAL JOURNAL

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JOSEPH H. RAYMOND, M.D.

ALEX. HUTCHINS, M.D.

JOSEPH H. HUNT, M.D.

GLENTWORTH R. BUTLER, M.D.

FRED. D. BAILEY, M.D.

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ORIGINAL ARTICLES.

A RESUME OF SOME OF THE MORE IMPORTANT LAND-
MARKS AND OF POINTS IN THE TECHNIQUE OF
OPERATIONS FOR INGUINAL AND FEMORAL
HERNIA.

BY EDWIN A. LEWIS, M.D.,
Professor of Anatomy, Long Island College Hospital.

Read before the Medical Society of the County of Kings, October 15, 1889.

It is neither necessary nor appropriate, before an audience of this character, and in a paper necessarily brief, to enter into a detailed description of the anatomy of *any* variety of hernia, or to try to describe at length the usual operations for this trouble. The purpose of the paper will be served if we first call attention to *some* of the practical anatomical points which the surgeon has to remember in dealing with any case clinically; and, secondly, if we emphasize some of the procedures in the technique of herniotomy, which have done so much to lessen the dangers of this operation.

First, then, the anatomy. We start with a tumor in the region of the groin. This may be large or small; it may be recent or of long standing. We have to determine its character. The subjective symptoms of course aid us—*i. e.*, pain, local tenderness, constipation,

perhaps constitutional disturbances or even stercoraceous vomiting. Rather rarely this class of symptoms is all there is to guide the surgeon. This happens when a very small portion of gut is occluded in the ring—so small that no tumor or swelling is perceptible. These cases are obscure. The diagnosis of intestinal obstruction is not difficult, but it is almost impossible to be certain that hernia causes the obstruction. Happily, also, these cases are rare. In the vast majority there is a well-defined swelling. Is it hernia? The diagnosis is usually sufficiently easy, but not always.

We have to remember certain lymphatic glands, which may render the case doubtful. I have seen one operation for hernia which developed only an enlarged lymphatic, and have known of others. On one occasion I called a consultation to satisfy myself that I had only a glandular swelling to deal with, so doubtful was the case. If this was a hernia, it needed immediate attention; if not, the usual course of an enlarged gland would be followed. Foreign growths may prove deceptive—fibrous or adipose tumors, sebaceous, cystic, or malignant tumors, even a psoas abscess, pointing where a femoral hernia would naturally show itself.

Hydrocele, varicocele, and sarcocele have to be excluded. Still, in the vast majority of cases, the history and the aggregation of symptoms, subjective and objective, will guide to a correct opinion.

The condition which is most deceptive is the presence of an enlarged lymphatic. These often appear suddenly, particularly below Poupart's ligament, at the point where a femoral hernia might be found. When sure that the tumor is hernia, the next question is, What variety is it?

Much of success in treatment, either by reduction or operation, depends on a correct answer. Remember that the tendon of the external oblique muscle, from the anterior superior spine of the ilium to the spine of the pubic bone, is the ligament of Poupart. Remember that the external pillar of that triangular opening, called the external ring, is attached to this spine of the pubes, while the internal pillar is attached at the symphysis, this inner pillar being also a part of the external oblique tendon. Thus it is plain that the external ring is almost in the median line of the body.

Remember that the internal ring lies at the middle of Poupart's ligament and only half an inch above it, the inguinal canal being about an inch and a half long. If the hernia can be traced through this external ring, we are sure of inguinal hernia. Often this cannot be done, particularly in fleshy subjects: there is a tumor in the region of the groin, which is surely a hernia, but the external ring and the inguinal canal fail to serve as guides. Neither can the origin of the tumor be

shown to be below Poupart's ligament, when it would surely be femoral; nor above Poupart's ligament, when it would as surely be inguinal.

We remember that the femoral ring is larger in females; but still the landmarks are not plain enough to make a diagnosis certain: *i. e.*, the hernia cannot be shown to be in the scrotum or labium majus; it cannot be shown to emerge near the median line from the external ring, nor be traced into the inguinal canal; it cannot be proved to distinctly originate either below or above Poupart's ligament.

In such a case, reduction or operation must be proceeded with without an absolute diagnosis. We may suspect femoral hernia from the sex and the indefinite character of the tumor, but not be sure of it. If the doubtful character of the hernia is remembered, efforts at reduction and methods of operation need not be interfered with seriously.

The landmarks thus far mentioned are few: Poupart's ligament, the external and internal rings, the inguinal canal, all with reference to distinguishing the variety of hernia to be dealt with, *i. e.*, as between femoral and inguinal. If we can trace the hernial tumor to or through the external ring, of course there is no question. If, on the other hand, we find the external ring and the inguinal canal free, and can map out Poupart's ligament above the protrusion, the diagnosis is established. Suppose we are sure of the general variety of the hernia. It is inguinal. We next inquire, Is it external or internal? The epigastric artery, coming up from the external iliac, is the important landmark.

Remember that this artery lies normally just to the inner side of the internal ring, and, if the hernia is recent, we may almost surely find the relation of the protrusion to it.

We can determine, with reasonable certainty, either that the tumor makes its way from the inner ring obliquely through the canal, or that it presses directly out from behind the external ring. In the one case the hernia is oblique inguinal and *external* to this epigastric artery; in the other it is direct inguinal and *internal* to the artery. But if the hernia is an old one, the anatomical relations are usually much changed. The canal is obliterated; the inner ring is dragged down and in, and is enlarged and apt to lie almost directly behind the outer ring. Now, it is impossible to say whether our hernia is external or internal.

If we can be sure that it is external, we cut upward and outward in enlarging the ring, to relieve the constricted gut: that is, we cut away from the artery; if, on the other hand, we can be sure that it is internal, we cut upward and inward. Being in doubt, we must cut directly up-

ward, parallel to the epigastric artery, to avoid injury to this important landmark. Damage to this artery would prove a serious complication.

The important landmarks in femoral hernia surround the femoral or crural ring. Through this the gut emerges on its way out to the saphenous opening in the fascia lata. Remember that the crural canal is very short—a bare half inch. Remember that the crural ring lies under Poupart's ligament; remember that it is almost surrounded by vessels. Outside, femoral vein; epigastric artery above and external; a communicating branch in front; in close proximity, above and to the inner side, the spermatic cord with its important structures. The inner side is occupied in many cases—about one in four—by the large obturator artery, skirting the edge of Gimbernat's ligament. To avoid all these structures, the ring must be divided very cautiously upward and inward, the knife-edge being dull and sparingly used. Depend on the finger to enlarge the ring, by stretching to a sufficient degree to allow the gut to be replaced.

The sharp edge of the iliac portion of the fascia lata must not be forgotten. Remember that this falciform process, or Hey's ligament, is attached above to Poupart's ligament and the spine of the pubic bone, being continuous with Gimbernat's ligament. Femoral hernia presses directly against this sharp fixed edge as it emerges from the saphenous opening and turns upward toward the abdomen. At this point you *may* find the constriction, instead of farther up in the crural ring.

Your attention has thus been called to the more important anatomical landmarks and the relations they bear both to diagnosis and treatment. To diagnosis, as they assist in determining the variety of hernia to be dealt with; and to treatment, as they need to be remembered and avoided.

It is, however, the fact that, after applying all the anatomical knowledge which can be brought to bear on certain cases, they are not entirely clear until the surgeon's knife has exposed the parts to view, so that the absolute relations of the parts can be seen.

In considering the technique of herniotomy, I call your attention, for the purposes of this paper, as already set forth, not to the operations step by step, any more than I have already done to the detailed anatomy, but rather to some of the more important steps in operating—perhaps I ought to say to certain precautions, not to be omitted, which are as important as the actual incisions.

Remember, first, that the abdomen is to be opened just as truly as if a laparotomy for ovarian tumor was about to be performed. To be sure, the extent of the peritoneal incision is not great, but that membrane rebels against any careless handling even when but slightly inter-

ferred with. Therefore let the surroundings be as favorable as possible, and all antiseptic precautions taken. When the home surroundings are not good, and hospital advantages can be procured, the patient should be advised to take advantage of them. In fact, I believe that, in the majority of cases, the patient will have a better chance for a favorable result in any well-ordered hospital than at home. The abundance of light and air, and the number of trained attendants to be found at a hospital, cannot be elsewhere provided except in the homes of the wealthier classes. This course is often either impossible of attainment or peremptorily declined.

Do not begin the operation until arrangements are made for plenty of hot water, plenty of suitable soft towels or cloths or large flat sponges, and competent assistants to keep them hot, for the purpose of keeping the bowel, when exposed, and the parts in the vicinity of the operation both aseptic and at a proper temperature. I cannot urge this point too forcibly. I am confident that I have seen lives saved by careful attention to the keeping of the exposed parts well protected by hot aseptic cloths frequently renewed—particularly keeping any exposed gut well covered.

I am just as positive that I have seen patients exposed to serious risk by the failure to observe this precaution. The danger of subsequent peritonitis or septic poisoning is thus reduced to a minimum.

Let the region of the body to be operated on be carefully cleansed and shaven.

Methods of antisepsis do not form a part of this discussion. The preparations are to be made the same as for any capital operation. Instruments should be placed in a strong carbolic-acid solution. The usual irrigating fluids should be ready. These and other preparations are not special to this operation.

First incisions may be liberal. Hæmorrhage in either inguinal or femoral operations is seldom a serious complication, except as accident happens to the two considerable sized arteries, already mentioned in discussing the landmarks.

After dividing the skin and superficial fascia, we fail to recognize the layers of covering, we learned so, carefully, when students. The successive layers that we do find are to be divided on a director until the sac is reached. These layers may be many or few. They will be many in fleshy persons and in those who have worn a truss for some time. The irritation of a truss causes local thickening of the tissues. They will be few in cases of recent hernia, particularly in thin patients. When these are divided, we come to the sac.

It may not be difficult to recognize this by its tense rounded appearance, the filamentous character of the membrane, and the arbores-

cent appearance of the vessels on its surface; but not infrequently the operator is in doubt whether he has reached it or not.

Two procedures help to dispel this. First, attempt to draw the supposed sac downward a little. If it is sac, it will yield to tension, at least to a certain degree; if not, we shall find the tissues are continuous with the abdominal parietes. Again: Pass a probe along the supposed sac. If it enters a cavity and moves freely, then we are sure that we have reached the sac-wall. Another guide is the presence of fluid in the cavity when opened. This is not constant. Sometimes there is fluid outside of the sac. Sometimes there is no fluid in the sac. The rule, however, is that, when the sac is opened, fluid escapes. This may be little or much. The amount is often so large as to cause astonishment.

If there is any doubt even at this point, it will be solved by the smooth shining surface of the interior of the sac, which is so characteristic of peritonæum.

The sac being open and the gut disclosed, the questions of replacing it in the abdominal cavity, or of leaving it in the sac when it cannot be reduced, or of resecting it when gangrenous, or of making an artificial anus at this point, are among those to be decided, but involve the discussion of surgical principles which would exceed the limits of this paper, even if they belonged properly in this place.

The constriction must next be relieved. It seems easy in theory to determine what causes it, as the parts are all exposed. In practice it is often difficult, and may at times be impossible, to be sure.

In femoral hernia, it may be Hey's ligament, it may be the crural ring, it may be in the neck of the sac itself; in inguinal hernia, it may be conjoined tendon, it may be the infundibuliform fascia between the external and internal rings or at the internal ring, it may be at the external ring, it may be (and often is) in the neck of the sac itself: whatever it is, it must be searched for and relieved. The direction of the relieving incision has already been discussed in speaking of the landmarks.

The disposition of the sac after reduction of the intestine; the disposition of the intestine itself when anything more than simple relief of the stricture and reduction is necessary; the disposition of omentum found in the sac,—all these questions will be considered in another division of the subject.

Two or three points more, and I am done.

The patient may be in good condition; the gut may be in good condition to return to its cavity, but the swelling and tension so great that reduction is impossible, even after enlarging the constriction as much as is deemed safe. In such a case it is good surgery to make an

opening into the intestine and allow its contents to escape, being careful to direct them away from the wound, or at least first to carefully protect the wound from contact. This will relieve tension sufficiently to allow of reduction in almost every case. The small opening in the gut, when carefully closed by the Lambert suture, does not prove prejudicial to the success of the operation.

Adhesions often are found between sac and intestine or between omentum and intestine. These must be carefully separated by the fingers or some blunt instrument. Intestine and omentum should always be separated.

In cases of threatened gangrene of the gut, it is sometimes admissible to allow adhesions to remain, particularly those near the neck of the sac, as they tend to form a barrier to the admission of any foreign substance into the abdominal cavity in the event of the gut giving way.

Great care is to be taken to guard against admitting any foreign substance into the abdominal cavity. When this threatens, protect the opening by an antiseptic sponge or plug of iodoform gauze. Remember that the cord lies behind the sac in inguinal hernia. Both this and the gut are liable to be injured by careless incisions. Every cut, after the original opening in the skin, should be made on a grooved director.

Lastly: Be careful not to disturb the testicle from its situation in the scrotum; and, in case it is disturbed by being drawn up with the sac, do not try to reduce it with the hernia. This may seem a foolish piece of advice. Still the cord is often firmly attached to the sac by adhesions, and, during the necessary manipulations, the testicle may easily be drawn out of the scrotum and appear in the wound. I once saw a distinguished surgeon, while operating before a class of students, make persistent efforts to reduce a testicle which had been drawn up with the cord and sac. It was not until his house-surgeon—now a well-known professor of surgery—called his attention to what he was trying to do that he desisted, and, returning the testicle to the scrotum, informed the class that the adhesions had at last all been overcome, and that the hernia was successfully reduced. This announcement was followed by applause.

SOME POINTS ON THE REDUCTION OF HERNIA.

BY J. S. WIGHT, M. D.,
Professor of Operative and Clinical Surgery at the Long Island College Hospital.

Read before the Medical Society of the County of Kings, October 15, 1889.

The part of the surgical report assigned me by the committee relates to the reduction of hernia. And by this I understand that I am to consider the practical question of reducing some part of a viscus

that has protruded from an abnormal opening. And as this question is a very broad one and cannot be fully considered in one part of a single report, I am obliged to limit my remarks to Some Points on the Reduction of Hernia.

In the first place the question of diagnosis lies at the bottom of the question of reduction of hernia. How could the surgeon reduce a femoral hernia, when he is under the impression that he has an inguinal hernia? How could he reduce an oblique hernia when he has made a diagnosis of direct hernia? On more than one occasion I have been asked to assist in operating for inguinal hernia and have easily reduced a femoral hernia. It is evident, therefore, that a mistake in diagnosis does not prove that a hernia is irreducible. It only proves that the surgeon, who makes a mistake in diagnosis, cannot reduce the hernia which he is called to treat.

A correct diagnosis largely depends on the following facts: 1. The surgeon must have a complete knowledge of the anatomy of the regions where hernia occurs. There is no need of any argument or illustration to prove this proposition. 2. The surgeon must be thoroughly informed in regard to the pathology that results in connection with hernia. If he is ignorant on the pathology of hernia he cannot make a correct diagnosis. 3. And then it must follow that the surgeon must have experience. He must have had much practical observation and study of the signs and symptoms of hernia. Without practical knowledge the surgeon will often fail to make a correct diagnosis of hernia.

In the meantime several other practical questions may arise. Has the hernia just appeared, or is it an ancient dislocation? Has it existed a few hours, or a few days? Is it large or small? Does it contain omentum or intestine? Or does it contain both intestine and omentum? Is there adhesion or obstruction? Or have we an obstruction following more or less adhesion? Is there strangulation, with or without gangrene? Is there inflammation accompanied by the formation of pus? Has the hernia been in existence a long time, so that adhesions have formed, making reduction impossible? Is the abnormal opening large or small? All these questions have a practical bearing on the reduction of hernia, and may be raised by the surgeon before he makes taxis.

And then the question of operation comes up in many cases of hernia, and must be considered by the surgeon. It is often necessary to make preparations for an operation before we attempt to reduce a hernia. The operation is made in order that the dislocated intestine can be reduced. If the patient survives and a radical cure can be effected, the surgeon will have done good work. The question of rad-

ical cure follows the successful attempt to cut down and accomplish reduction. Our opinion at present is that the surgeon ought to reduce a hernia, if he can, and then subsequently operate for a radical cure. But the question for us now to consider is that of reduction.

I need not now review the points which relate to the position of the body and limbs of a patient who has a hernia to be reduced. Let me give a description of the method of taxis which has been very effective in my practice for many years—a method that has prevented more than one operation, and diminished the number of irreducible herniæ.

Grasp the hernial tumor with the right hand, and then make gentle traction; the hand compresses the hernia and its contents, and liberates the neck of the sac in the constricting canal. And then two effects may follow: Some of the contents of the sac are expressed into the abdominal cavity. This may be the contents of the intestine—the special fluid of the sac, or the intestine itself, especially if it is not adherent to the sac; or the sac and its contents may begin to be reduced. The surgeon cannot make this gentle traction without compression, and the compression tends to expel the contents of the sac, as well as the sac, when it has not formed adhesions to the tissues around it. And what is more, the gentle traction tends to straighten out that part of the hernia just external to the canal that contains the neck, and the effect of this is to remove the folds which overlap and prevent successful reduction. And then another expedient may be put in operation. The thumb and fingers of the left hand may grasp the parts of the hernial tumor just external to its exit from the abnormal opening, and this for two purposes: one, to prevent the hernial sac from folding over, and, as it were, away from the hernial canal; the other, to guide the hernia more directly to the external opening of this canal. And when these purposes are accomplished, such traction as we have made may cease, and then more or less firm pressure with the right hand may be made in such a direction as to cause the hernia and its contents to move toward the opening whence it came. The hold of the constricting tissues has to be loosened by gentle traction; some of the hernia may have been reduced; the folds of the sac have been removed; the thumb and fingers of the left hand guide the hernia toward its exit; the reasonably firm pressure induces more and more of the hernia to return to the abdominal cavity; and finally the reduction is complete, and the patient is relieved of pain and distress.

Generally such a result can be obtained without an anæsthetic. In a few cases I have employed an anæsthetic, mostly in sensitive patients. In the first place, I make a reasonable effort to reduce a hernia, and then, on failure, I give an anæsthetic; and if I do not succeed then, I operate. And the great majority of cases of hernia which I have been

called to see I have reduced without an anæsthetic, and by the method above described. I urgently recommend this method, and I have tried to induce others to adopt it; in fact, I have tried to teach it to others.

It need not be urged that a hernia is sometimes irreducible. We have been considering a hernia that can be reduced, and we simply say that such a hernia can be most readily and surely reduced by the method we have above described. Of course a real irreducible hernia requires an operation, and the sooner the better.

And I cannot conclude my very brief report without adding a few facts of observation. It has often happened that a doctor has been called to a patient who has had a hernia, strangulated or not, as the case may be. He has not succeeded in reducing it, and has advised an operation, directing that the patient should be taken to the hospital. The conveyance carrying the patient has been driven over the streets of this city, and when the surgeon finds the patient in the hospital he can easily reduce the hernia. This success is not always due to the skill of the visiting surgeon. In the meantime the patient has been well shaken up by the drive over the rough stony pavement; in fact, the hernia has also been shaken up, and the grasp of the constricting structures has been loosened, so that reduction is easily accomplished.

DISCUSSION.

Dr. FOWLER.—In order to demonstrate the cicatricial plug which occupies the site of the canal after McBurney's operation, I brought two of the patients here to-night upon whom this is well shown.

The first is a man of fifty, who had suffered from inguinal hernia for about thirty years, and who about three and a half years ago, in Stockholm, had an operation performed for a radical cure, which consisted in ligating the neck of the sac and drawing together the pillars of the canal and the edges of the skin.

The second patient is a female, age forty, who was admitted to the hospital with a strangulated hernia of three days standing. The hernia was of the inguinal variety, and had existed for upwards of fifteen years. No truss had ever been worn.

The usual operation for strangulated hernia was performed, and this was supplemented by the operation of radical cure after the manner of McBurney. The gut was found in an exceedingly threatening condition, and it was only after waiting for a half hour following the relief of the constriction that I decided to return it to the abdominal cavity. The patient did not thereafter give us the slightest occasion for uneasiness, and at the end of the customary six weeks walked out of the hospital a well woman.

These patients are merely introduced to demonstrate the condition of affairs after the McBurney operation ; not as examples of radical cure, but rather as showing the method by which a radical cure may be brought about. Unless patients have been well advanced into the second year after the operation, I should not wish to use them in support of any operative procedure for the radical cure of hernia.

More recently renewed attention has been directed to Bryant's operation—the so-called method of interweaving the sac in the pillars of the ring, but the advantages of this method are no greater than the ordinary procedure of securing the pillars of the ring and the edges of the skin in apposition by deep sutures. All of these operations have this objection, that no provision is made for preventing a subsequent concave condition of the peritoneal surface of the abdominal wall sac at the site of the internal ring ; and unless some such provision is made there will be a “teasing” by the pressure of a knuckle of intestine coming in contact with this concave portion of the ring until the hernia recurs.

Dr. W. T. BULL, of New York.—I feel very much indebted to your President for the privilege of listening to the papers on hernia, and I am very sorry that I can make but a very poor return in the way of any remarks that I may make. I have had, however, an extensive experience in hernia, and I should be glad of an opportunity to present one or two facts gleaned from that experience for the consideration of the Society, and particularly because my experience has not led me to take quite the enthusiastic views with regard to the radical cure of hernia that you have already heard expressed.

I commenced to try to cure hernia radically something like ten years ago, when Heaton's method of radical cure was quite new. I performed that method in about fifty cases, which I reported in 1882 to the Surgical Society of the City of New York. In eleven of these cases improvement was reported ; in five a cure was claimed, and in the balance the result could not be ascertained, because they were hospital cases and could not be traced. The Surgical Society, and apparently many of the profession, accepted the result as a valuable contribution to surgery, and I have found myself referred to in the surgical literature as one operating successfully for the radical cure of hernia by Heaton's method of injection. I sometimes think I have been wrong in not correcting that statement earlier. Five of these cases which were reported cured had not seen a return for periods of over a year, with but one exception, which died at the end of nine months. But I learned in the year following that all of the five experienced relapses. Every time that I have seen the statement made that there was something in Heaton's operation, and that I had accom-

plished brilliant results by it, I have felt somewhat guilty for allowing this statement to remain in print. I mention this at some length, because I think that at the present moment we are too ready to accept testimony without looking into the nature of it. In other words, we are ready to accept statements of those who present statistics, without carefully looking into these statistics, to see how much ground or experience they cover, and over how long a period of years that experience has extended. Now, in a question like hernia, an experience of one year is a trifle. One must have an experience in operation that extends over five or six years or more, and when we consider that those cases which are ordinarily supposed to have been cured by any operative method, relapse all the way from five to forty years after the operation, we must approach the question with a great deal of hesitation and examine very closely the results of those who claim to effect a radical cure by any given method.

About 1883 the first important statistical contribution to the radical cure of hernia was made by Leisrink, of Hamburg; and it embraced a collection of 390 cases operated on by different surgeons, some English, some German. The mortality result was quite satisfactory—was so small that the result of that statistical contribution was to encourage surgeons generally to attempt the operation. The results shown by these statistics were not particularly satisfactory as far as cure was concerned. It is not necessary to mention them, but I would refer at once to the methods employed. The best showing was made by an operation introduced by a surgeon named Riesel, who claimed that it was desirable to ligate the neck of the sac at the highest point possible, and, in order to do this, he introduced that feature into the operation which has been referred to to-night—the splitting of the anterior wall of the canal, so as to ligate the sac of the hernia at its highest point, and then closing the inguinal canal with sutures. That was the form of operation which at that time gave the best results.

Another form of operation which has been referred to is that of Socin, which consists in drawing down the sac as far as possible, and ligating it at the highest point possible, and then suturing the integuments over a drainage tube, which is left in the canal. There is a direct and decided difference between these two operations. One claims to close the canal, the other leaves the canal open, without sutures.

It was on the strength of information gained by the perusal of these statistics that I commenced to operate at that time, and up to the present time I have reached a number exceeding one hundred cases. In order to satisfy myself which method was the best, I adopted this plan: Feeling convinced that there was something in this point made by Riesel of ligating the sac as high as possible, I split open the anterior

wall of the inguinal canal and tied the neck of the sac as high up as possible. In about one-half of the cases the canal was then sutured with catgut, and in the other half a drainage tube was left in, and the integuments sutured over it. One plan may be called the method of ligature and excision—simple ligature of the sac high up, and excision of the sac, without any suturing of the inguinal canal. The other method may be called ligature of the sac, and excision and suturing of the pillars of the ring. These two methods have been followed by myself side by side since 1883. Before stating what the results are as to cure I would mention, so far as details of the operation are concerned, that the sac has never been entirely excised unless it was of small proportions; where it was large it was always left in place and simply drained through the bottom of the scrotum. The number of cases I have stated to be something like one hundred, but the cases operated on within the last year, about thirty in number, I have not included in these statistics, because they have not run a sufficiently long period of time, as emphasized by Dr. Fowler. So I have material embracing seventy-two cases. Of these seventy-two cases, thirty-eight have been operated upon by the method of ligature and excision and suture of the rings, the method employed by Banks, of Liverpool. Thirty-four have been operated upon by the method simply of ligature and excision, without any suture (Socin). Three have died, and it is not necessary, I think, to make any reference to the mortality, since these were cases that died in the very earliest period of my operation, and were not proper ones for the operation, and would not in any subsequent series have been subjected to it. In order not to trespass too much upon the time of the Society I will not comment further, but would say in my individual opinion the mortality amounts to nothing. That leaves the number who recovered from the operation sixty-nine. Of these twenty-nine cannot be traced; forty, however, have been examined at periods of at least one year from the time operated on. The two methods show about the same result. Of the twenty cases subjected to the method of ligature and excision and suturing of the pillars of the ring, there have been twelve cures and eight relapses, and the figures are precisely the same for the other method.

I would say a word in reference to the word "cure." I think it is time we banished that expression altogether, because in view of the tendency of hernia to relapse, particularly in late periods of life, I think it is doubtful if we ever can call a case of hernia cured. It would be a better plan in reporting these cases if we simply reckoned them by the number of relapses. Of course the operation which showed at the end of a given period the smallest number of relapses would be the one entitled to the most confidence. I found in comparing these two

operations from various points of view, that there is very little to choose between them. In general the relapses have been somewhat more prompt after the simple method of ligature and excision of the sac without any suture of the pillars of the ring, than where the pillars of the ring have been sutured. On the other hand, the number of relapses at the end of the first year has been very much greater where the suture has been used than where it has not been used. But in general, and in order not to detain you with unnecessary details, I may say, that as a result of this personal experience, I think there is very little to choose between the two methods, but that I should prefer the simpler method of the two, and that is the method which Dr. Fowler spoke of as the method of Socin, of Bâle.

It may be proper to say one word in reference to the applicability of this operation. I am very glad to state that I share the enthusiasm of the gentleman who has written the paper in reference to the indications for the operation. I think it should be applied to every case of strangulated hernia where the intestine can be returned into the abdomen; and to all cases of irreducible hernia, except very large ones, which contain intestine; for the operation under such circumstances is an extensive laparotomy, the results of which in a number of operations have not been very good. They should be classed as cases that are contra-indicated. I should differ somewhat from the report of the Committee with reference to the application of any operation to children. I have certainly seen a great many patients who give in later years a history of wearing a truss in childhood, and in a majority of cases they did not show any sign of hernia. I believe, notwithstanding the present disposition to do away with the truss, that it has cured a great many people and is likely to cure a great many more, but these people are likely to be children to whom the proper truss is applied at the earliest period that the hernia is discovered. The simplest kind of apparatus in infants will frequently cure a rupture, and in children up to the age of five or six I should never despair of accomplishing the radical cure of hernia by means of a truss, and I should never willingly subject any child of that age to an operation, unless a very careful and experienced person in the management of trusses had had an opportunity to try to cure them. In general I am not disposed to advise operations on adults whose hernias are easily controlled by a truss.

If I would not be detaining the Society too long, I should like an opportunity to say a word with reference to a form of operation which I have no experience with. I venture upon that with some delicacy, because it is a form of operation to which, after a careful consideration, an experienced surgeon has given his approbation, and furthermore because it is a form of operation which my colleague, Dr. Mc-

Burney, has carefully elaborated, and brought into such a state of perfection that it can but excite the enthusiasm of everybody who reads about it. I have not done this operation. In the thirty cases which make up the hundred to which I have referred, and which have been done during the last year, although during that time McBurney's operation has been before the public, I have not followed it, but have followed one of the closed methods. I find certain objections to it in theory, and have seen recurrences in practice. Theoretically I think the operation is founded on a principle which is false. I do not believe that the tissue left behind by the healing of an open wound is as strong, or can be made by any surgical process as strong, as the tissue left behind by rapid primary union. I think to hold that view is at variance with all our knowledge of wound-healing, and to act in accordance with it is contrary to the practice of all abdominal surgeons. Every surgeon who is a man of experience will say that those cases in which the abdomen has been opened in the median line and which have healed by granulation, are more likely to be followed by ventral hernia than those which have healed by primary union. This objection which I make to this operation is contradicted by some who advocate this operation and who state that this is not a granulation cicatrix, but that it is a carefully formed plug, made by sewing the skin to the transversalis fascia for the distance of the entire length of the inguinal canal. Now, the inguinal canal is protected by several layers of fascia, all of which are strong structures. Everyone of these is swept away by this effort to get up high and reach the neck of the sac, and the abdominal wall is reduced from its laminated condition to a simple mass, consisting of transversalis fascia and peritonæum, which is to be covered by this cicatricial layer. This I believe to be as insufficient as anything can be. These were the convictions which I had with reference to the "open" operation when it was first proposed. A number of surgeons have, however, adopted it and a good many operations have been done. The relapses are, however, beginning to appear. In the course of the last year at the Hospital for the Ruptured and Crippled, there have been about fifty cases of hernia that have relapsed after all forms of operation. All of these cases, although according to the statements of the patients they were radical operations for hernia, could not be literally taken for that. I could not use them for statistical purposes unless I could follow the patients in the hospital records. In this search I was able to follow twenty-five. Ten of these were operated upon by McBurney's operation in one year. I do not know whether there is a similar institution for the treatment of the ruptured in Brooklyn. If there be, I fear that similar cases will be met with there. I would like to say, furthermore, in reference to the

kind of relapse that occurs after this "open" operation, that I was very much struck with the first patient who presented himself, on whom this operation had been performed. He had been operated on for inguinal hernia on both sides, and as in the case of these patients which Dr. Fowler has shown us to-night, his whole inguinal canal had been replaced by cicatrization. At the time I saw him, three months after the operation, the hernial tumors on the two sides were about as large as my fist, and the remarkable fact was that the cicatrix over these hernias had stretched to such an extent that you could almost see the movements of the intestines through them. I had no sooner observed this case than I read the statement of Dr. Ford at Washington. He narrated the case of a patient with umbilical hernia in which a beautiful cicatrix had formed, but which at the end of six months was so thin that he could see the intestines through it. Now, the presence of such a condition must be a very unfortunate one for the patient, who has got to have something done for his relief when a relapse has actually occurred. It is very well to say that trusses are no good, that they never should be worn after operation, but what are the patients going to do when the hernia do relapse? The most enthusiastic operator is very glad to apply a truss then. Now, when these patients who have a thin cicatrix come to the truss man for a truss, he is much embarrassed. That thin cicatrix is pressed on the inside by the intestines, and on the outside by the truss, and it is in a condition very similar to that which exists in some cases of irreducible umbilical hernia, where the coverings of the hernia are thin and cannot stand the pressure of the overhanging clothes, and where the patients are in a deplorable condition. I have met with two cases operated on by the "open" method, who presented no relapse after several months. These patients came early for trusses, and I think if the operation is to be done it would be better to wear a light truss immediately afterwards.

I feel as if I had trespassed too long upon the time of the Society, and I thank you, gentlemen, for your kind attention.

Dr. PILCHER.—I wish to express my own appreciation of the papers that have been presented here this evening, for the careful statements that have been given to us, and for the broad and comprehensive views which have been laid before us. I am sure there is none of us who can go away without feeling that he has received both information and stimulus for future guidance, and especially do I wish to express my appreciation of our indebtedness to our colleague from New York, who has been willing to give the results of his own ripe experience in this matter. I think this is a subject which may well occupy much of the thought and time of any practitioner of medicine.

It might be well for us to reflect for just a single moment upon the

continued presence of those who are afflicted by hernia among us, as well as the immense amount of disability and of suffering and of danger which this affliction entails upon the members of the community. If it is so that one out of every twelve persons is afflicted with hernia, the number of those who have hernia in this city of ours alone must exceed 60,000. If it is true, as is stated, and as was shown by the census of 1880, that over 600 deaths took place in one year in the United States from strangulated hernia, the possibility of death can never be dismissed from consideration by one afflicted with hernia. We are to remember that this is a disability which may develop in connection with the most robust at any period of life. This is well illustrated by the fact that, during the recent war of the Rebellion, from our own army alone in two years nearly 40,000 soldiers were invalided and discharged from the service in consequence of hernia developing after their enlistment, not to speak of the immense number of persons debarred from enlistment in consequence of hernia existing at the time of their application. Now, with all of this mass of danger and disability before us, it is not to be wondered at that the question of the radical cure of such a condition should have created so much interest and should have been so extensively discussed and experimented with in the past few years, since such experiments have been made comparatively safe in consequence of improved methods of operation. When the method of Heaton for the injection of irritating substances subcutaneously first attracted attention, I tried it in a very limited number of cases—two in all. The first case was cured and remains cured, I believe, until the present time, some ten years or more. The second case relapsed within six months. I afterwards performed upon this second patient an operation for radical cure by the open method, during which I was able to demonstrate to myself the irritation and the condensation of tissue which had been produced in the inguinal canal by the injection, which made the operation for radical cure considerably more difficult than it otherwise would have been.

The question of the possibility of relieving this condition by the use of a truss has been referred to this evening. Observers who have given a very extensive investigation to this subject tell us that about twelve per cent. of those cases that are subjected to treatment by the truss are radically cured by the wearing of the truss. That is, as has been defined by Dr. Bull, they are apparently relieved of their hernia and pass years without any relapse, after having for a certain time worn a truss. We know that this is especially likely to take place in cases of hernia occurring in infants, and with any recent hernia in adults. If the hernial protrusion is not very great, and a truss is applied at once and is worn with a proper amount of intelligence and assiduity, the

hernia is prevented from returning, and the wearing of the properly fitting truss, unless the patient is subjected to great strain, is likely to bring about a fair immunity from further recurrence of the hernia. But notwithstanding all this, the other eighty-eight per cent. of cases of hernia still remain for us to condemn either to the perpetual wearing of a truss, or to be relieved by some means of radical cure. And it is certainly the case that at the present time no method of radical cure is spoken of that ought to be entertained by any intelligent surgeon except that by the open method, by the bloody wound. Various methods have been mentioned this evening, and their merits and demerits pointed out. I do not wish to take up much of the time of the Society this evening, but I would say, that for operators in general, it seems to me that in this particular region the greatest amount of safety and security to the lives of our patients are to be obtained by adopting methods in which there shall be no danger of retention of secretions in the wound made. Therefore if the integument is to be drawn over it, that method in which is included the use of the drainage tube is to be preferred for the general surgeon, as entailing less danger of urinal disturbances and possible peritoneal involvement. It has seemed to me for this reason that the open method of McBurney was particularly free from danger, and in the number of instances in which I have used it, I have found perfect immunity from inflammatory complications. For that reason I think it would be the proper method to adopt in many instances. But after all, whether the method of McBurney, or the method of Riesel, or the method of McEwen, or Ball, or Barker, or any method which may be adopted, the main question is, when a patient presents himself to us with a hernia, whether we can urge upon that patient whether he should submit himself to the procedure of radical cure by an open method. In the earlier period of my thought upon this question I was inclined to be decidedly conservative and to restrict the operation only to cases first, in which strangulation had taken place, or in which the hernia was irreducible and was giving the patient extreme disability, or to cases that were with difficulty restrained by a truss, that were growing more dangerous continually and were seriously disabling the patient from the ordinary avocations of life. But as I had more experience with the operation, and as I reflected more upon the conditions which demanded the operation, I became convinced that it was only in the cases of the classes that I have mentioned that there was much danger from the operation. In some of these cases, indeed, the danger may be so great that it would be better not to attempt any operation at all, but simply to be content with such palliative treatment as the case might admit. With the great mass of cases of ordinary hernia, however, comparatively small, easily

reducible and easily kept up, which come to us—in these cases the operation is comparatively easy and simple to accomplish, being attended with little danger. I am logically driven, therefore, now to advise such people to submit to operation. As time passes on I am getting more and more on the ground which has been taken by the gentlemen who have spoken here this evening; that is to advise all persons who are the subjects of hernia to submit themselves to some operation for a radical cure, that is to say, provided a truss has been worn a certain length of time under proper conditions without cure.

Dr. WIGHT.—In reference to the question of relapse. We must remember first that our patient is in daily and I may say constant peril of strangulation. He knows not at what hour or at what moment he may be in danger of his life, perhaps before he can get a competent surgeon; he may wear a truss or not, as the case may be. That is one side of the question. The other side is this: after he has been operated upon for radical cure he may not be radically cured, but those conditions and circumstances which put his life in peril before have been mostly obliterated, and while he may possibly by that relapse which has been spoken of, have as much inconvenience as before, he is not in that daily peril and danger of his life. We are advocating this operation not because the trouble does not relapse, but because it relieves the individual of that constant peril that we have seen brought out by various reports of surgeons. That is one of the reasons I am in favor of these operations.

Dr. FOWLER.—I was struck by one or two points in Dr Bull's remarks in regard to the undesirability of allowing cicatricial tissue to take the place, for the purposes of security, of the immediate primary union of normal structures. I am willing to concede that this is true in all situations except in the case of the inguinal canal, but I am firmly convinced that the formation of cicatricial tissue in this situation serves a double purpose. In the first place, there can be no question in regard to the conditions as they exist after the operation, as shown by cases under my observation for nearly two years; the contraction of the cicatrix, the folding in of the edges of the elliptical shaped gap left by the open method of operating undoubtly insures, or conduces at least, to a smooth condition; certainly a concave condition of the peritoneal surface of the abdominal wall is not favored. I desire to impress that view now, because it may seem that I am advocating the open method and the formation of a cicatricial plug for the sole purpose of obtaining a stronger retentive tissue than that which can be obtained by the immediate union of the natural coverings of the canal. The obliteration of the inguinal canal itself I consider a very important factor in the McBurney operation for radical cure. Certainly no as-

surance can be given that the inguinal canal is obliterated unless the edges of layers incised by the operation for the removal of the sac can be prevented from immediately uniting.

Dr. Bull spoke of the folding in of the edges of the skin and their adhesion to the transversalis fascia; that is partially true and partially not. The edges of the skin do not adhere immediately to the transversalis fascia. In fact a layer of granulation tissue springs up in the floor of the canal, and from this cicatricial tissue is formed; to this are attached the edges of the skin.

My experience in the operation for radical cure prior to the introduction of the McBurney method covered about eight cases, most of which were operated upon by the method of Socin, that of leaving a drainage tube in the canal and uniting the super-adjacent tissues. I have never thought it justifiable and have never advised that the entire super-adjacent structures should be immediately drawn together, and thus allow the inguinal canal to remain as a dead space, with no drainage provided for. The method of leaving a drainage tube in the canal, unless the open method is adopted, is to my mind the only other justifiable one. Therefore I am far from being prejudiced, but was rather favorably inclined theoretically to that method. The eight cases operated upon by myself truly are but a limited number, compared to the larger number mentioned by Dr. Bull, but they are quite sufficient to suggest to me the possibilities of that method. I may say further—and this may perhaps invalidate my statement in regard to the possibilities in regard to radical cure by the method of Socin, that my patients were allowed to rise and walk about and wear a truss as soon as the wound healed. Six of these eight cases relapsed. I hardly like to trespass upon Dr. Bull's good nature, but I would like to ask concerning the after-treatment of his patients, and that of the parts themselves. Was the wearing of a truss insisted upon, and was the patient permitted to resume his occupation at once?

The point made by Dr. Wight in regard to the desirability of instituting some operation in most cases otherwise considered favorable for operation, for the sole purpose of preventing those dangers of strangulation and irreducible conditions which are so frequently found, at least with relative frequency in the cases not operated upon is well worthy of attention. That is to say, the instituting of an operation for the purpose of doing away with these conditions of the ring and canal, which predispose to strangulation, constitutes, of itself, a justification for the operation for radical cure. I am in accord with him in that, and I believe the future will show that the number of relapses after an attempt at radical cure, relatively large and disappointing though they may be in many respects, will still leave us with a smaller proportion

of herniotomies to perform for strangulated hernia than in the past.

Dr. BULL. — I think that all the patients to whom I have referred were allowed to get out of bed and move about and leave the hospital as soon as their wounds were closed. So far as the wearing of a truss was concerned, I cannot without reference to notes tell the exact number that wore trusses ; but I instituted an inquiry with reference to this question, and could not find any figures that seemed to demonstrate one thing or the other. The entire table of cases upon which these statistics are based will be published in the Transactions of the State Medical Association of the present year.

THE RELATION OF THE CHOLERA BACTERIA TO MILK.

BY DR. KITASATO, OF TOKIO.

(From the Hygienic Institute of the University of Berlin.)

Translated from the *Zeitschrift f. Hygiene*, 1888, by J. M. Van Cott, Jr., M.D.

Prof. Robert Koch has already announced in the first cholera conference¹ that cholera bacteria can multiply in milk, and this has been since proven by numerous cholera infections by means of milk.

Simpson,² of Calcutta, cites a particularly interesting example, occurring on the ship *Ardenclutha* from Hamburg. From February 26th to the day of the arrival of the vessel in Calcutta, or until March 8th, there was no sickness on board. From March 8th to March 11th ten men, or forty-one per cent. of the entire ship's company sickened, and of these five had cholera and five a diarrhœa.

Investigations in all directions led to the fact that nine of the sickened men had been drinking milk which came from Calcutta. One other man who had partaken of the same milk was spared, which would lead to the conclusion that he must have taken but a small amount.

All of the others used "preserved milk" brought from Hamburg. Of these only one took sick and was the last to be attacked. Furthermore it was discovered that there were cases of cholera in the neighborhood of the milkman who sold the milk to the ship, and that moreover a water-tank near by had been contaminated with the excreta from these patients, and the milk was watered by the milkman with the water contained in this tank.

¹ Conferenz zur Erörterung der Cholerafrage. Berliner klin. Wochenschrift, 1884, H. 31.

² Gesundheitsverhältnisse in Calcutta während des Jahres, 1887. Veröffentl. des Kaiserl. Gesundheitsamtes, 1888. H. 33, S. 494.

On the ground of such facts I have thought it necessary to investigate the relation in which the cholera bacteria stand to milk. My experiments I carried on in the following manner.

On every occasion I saw the milk taken from the cow direct, so that I knew just how long the milk had stood before being experimented with. This is of importance, because in time the milk becomes sour, and the cholera germs are very susceptible to the action of acid (which prevents their growth). Fresh milk reacts always amphoteric.

I. UNSTERILIZED MILK.—I was able at the latest, fifteen minutes after the milking, to begin my experiments, which were so conducted that sterilized test tubes were filled with 10 to 15 c. cm. of the milk, and each tube thus filled inoculated with a platinum loop of an agar culture of cholera bacteria. A second series of tubes was next inoculated and served for control. The tubes were next brought into various degrees of temperature, namely, 8 to 12°, 15 to 18°, 22 to 25° and 36° C., and from hour to hour examined, and a platinum loop from each removed, and Esmarch's roll-plates of alkaline gelatine inoculated with the milk thus removed.

In the cultures which had stood at 36° C., the cholera germs multiplied very rapidly in the first three to four hours, and overgrew the remaining ordinary milk organisms, but afterwards lessened from hour to hour with the souring of the milk, and finally ceased growing, while the milk bacteria multiplied correspondingly.

The cultures which stood at 22 to 25° C. became much later sour, and the cholera germs remained longer alive, namely, they lived for one to one and a half days. Here also the cholera bacteria multiplied rapidly in the first ten to fifteen hours, and then were completely overgrown by the other bacteria forms.

At 15 to 18° and 8 to 12° C., the cultures first soured after one to two days, and the cholera germs died first in two to three days. No increase of germs occurred at these temperatures. It resulted also that the milk became sour faster as the temperature was raised, at which it was kept. When, therefore, it is considered that in ordinary life several hours usually elapse after the milking before the milk is taken, the result follows, assuming an accidental contamination of the milk with cholera germs, that with low medium temperatures the intermixed germs, with high temperatures on the other hand multiplication of them, in germinative condition get into the digestive organs of the consumer of the milk. Besides this I added to 10 c. cm. milk 1 c. cm. of a 10 per cent. sodium hydrate solution, and inoculated the mixture with a platinum loop of an agar culture of cholera bacteria, keeping parts at 36° C. and other parts at 23 to 25° C. The

culture at 36° became pretty sour after 48 hours, but the cholera bacteria showed themselves to be still living, and cholera only ceased to appear after 55 hours in a strongly acid milk; while on the other hand in those cultures which had been kept at 22 to 25° C., there was a considerable number of cholera germs yet living at the end of 78 hours.

And so we see that the length of life of the cholera germs in milk depends upon its reaction, the germs always dying faster in proportion as the milk sours faster, and moreover that the cholera germs remain alive until the milk gets strongly acid.

I must yet remark in connection with my methods of experimenting, that I poured all the gelatine in those Esmarch's tubes in which no cholera germs could be found into fresh alkaline peptone-bouillon, and placed this for some days in the culture oven, and then renewed the plate experiments with it. These efforts gave always negative results; in other words, no cholera germs grew.

II. STERILIZED MILK.—I placed 10 to 15 c. cm. of fresh milk in a test tube in the steam sterilizer for four or five hours, and then inoculated it with a platinum loop in each tube of cholera culture, and stood the tubes, some at 36° and some 22 to 25° C. From their contents I then from day to day inoculated fresh nourishing-gelatine. The reaction of the milk was in the beginning amphoteric; at 36° an acid reaction set in little by little, and in two weeks the cholera germs died, so that the culture was entirely germ free.

I also made from these cultures anærobic culture experiments, but with negative results, and was also unable to find any germs with the microscope.

On the other hand, in the cultures at 22 to 25° C. the cholera germs were living after three weeks. These experiments I give more in detail.³ The control experiments remained naturally always germ free.

For the practical purposes of life, on these experiments hangs a weighty question. How shall one treat milk before drinking it? A simple experiment leads at once to its solution. I took fresh pure milk, which was also sterilized, and inoculated it with cholera bacteria, then cooked it for five minutes in boiling water, or water from 96 to 100° C., and finally inoculated fresh alkaline nourishing-gelatine with platinum loops of this milk, and made it into Esmarch's tubes. But I obtained no cholera growth.

Since I repeated this experiment again and again with the same result, I can claim that through cooking the milk, one can most simply and certainly free it from cholera germs.

³ The table of experiments is omitted as being quite unessential to the understanding of the paper. It is to be found in "*Zeitschrift f. Hygiene*," Fünfter Band, 1888, v. c.

A NEW CURETTE FOR THE MALE BLADDER.

BY GEORGE G. HOPKINS, A.M., M.D.

Surgeon to St. John's Hospital and Consulting Surgeon to L. I. C. Hospital.

Read before the Medical Society of the County of Kings, October 15, 1889.

This instrument is one that I designed for a patient who was suffering from papilloma of the bladder, and was constructed for me by Messrs. G. Tiemann & Co.

It consists of two parts : a curette with a flexible handle, the curve of which is controlled by a screw movement at the proximal end.

The whole length of the staff is seventeen inches. Of this length three and a half inches of the distal portion are flexible. Ten and a half inches from the distal end the staff is enlarged and graduated into quarter inches for a distance of three inches. Nearer the proximal end is a metal loop, *g*, which indicates the position of the curette and serves as a handle to steady the instrument. At the proximal end is a screw fitted with a nut, *f*. One complete revolution of this nut will curve the curette a quarter of a circle. A drop of metal, *i*, on this nut indicates the curve of the curette, and is so arranged that when in line with the loop handle, *g*, the flexible end of the instrument is straight. The other portion of the instrument is fashioned somewhat after a Bigelow straight tube, *a*, No. 30 F, modified only at the proximal end.

About an inch from this end a perpendicular outlet is made at *e*, by means of which a fountain syringe may be attached when desired. It also serves the purpose of a handle, and indicates the position of the tube while introduced through the urethra to the neck of the bladder, as required while operating. The open end of the tube is fitted with a perforated screw cap, which sets down upon a washer, when it is desired, to hold fluid in the bladder to facilitate the manipulation of the curette.



The tube, having been introduced, the curette is passed through it. When the first graduation on the staff is flush with the screw cap, the curette has just emerged from the eye of the tube at the trigone of the bladder.

With care and gentle manipulation the whole surface of the bladder may be gone over, growths cleared away and detached. These can be washed away from time to time by removing the curette and closing the proximal end with the finger, while injecting fluid through the lateral tube.

I curetted the patient for whom I devised this instrument, with perfect success, removing about two tablespoonsful of papillomatous material and relieving the urgency of his symptoms very promptly. He was up and about the house the day following the operation.

There were present at the operation Drs. Bartley, Bird, Henry and Fairbairn.

PUBLIC LECTURES ON SANITARY SCIENCE.

Under the auspices of the Local Committee of the American Public Health Association, in connection with the Free Sanitary Exhibition, the following lectures were given during the month of November at the Brooklyn Institute. By A. N. Bell, M. D., editor of *The Sanitarian*, "The Public Health Exhibition," or Object Lessons in Sanitation. By Mrs. Lucy M. Hall, M.D., of Brooklyn, "Sanitary Clothing." By Miss Juliet Corson, "Foods and Economy in Cooking." By W. G. Anderson, M.D., "Physical Education. By Mr. A. L. Webster, C.E., "Sanitary Construction of Dwelling Houses;" Illustrated. By Professor Robert Spice, "Sanitary Lighting and Warming;" Illustrated. By James S. Coleman, Esq., Street Commissioner of New York City, "Civic Cleanliness."

THE CARTWRIGHT LECTURES.

These lectures were delivered by J. S. Billings, M.D., LL.D., at the College of Physicians and Surgeons, New York, on November 14, 20 and 22. The subject was Vital and Medical Statistics.

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EDITORIAL.

REFORM IN THE BURIAL OF THE DEAD.

The abuses connected with the present method of the disposal of the dead are not all met and remedied by either cremation or dessication. While sanitarians are directing the public mind to the possibilities of the contamination of water and air by earth-burial, equally philanthropic men are calling attention to the necessity for reform in the matter of expensive funerals and mourning, and to the dangers to which the living expose themselves in attending the funerals of those who have died from infectious disease, or at the cemetery, when, in inclement weather, the dead are laid in their last resting place.

In the matter of expensive funerals, Rev. W. W. Gist, who has made an exceedingly forcible argument looking towards reform in these directions, narrates one instance in which a laboring man, without means except as he earned it each day, was not satisfied with a coffin costing \$35 in which to bury his boy, but selected one for which he obligated himself to pay \$100. In another instance which he cites, the undertaker's charges against the estate of a servant girl amounted to \$448.25. This case being brought into court to compel payment, the judge very sensibly decided against the undertaker, on the ground that the charges were unjustifiable. Mr. Gist criticizes also the present expensive and unchristian custom of dressing in black. Oftentimes the entire available means of an already destitute family are expended in following the prevailing fashion, for fear that were this not done, their love and reverence for the deceased might be questioned.

There has, doubtless, been great reform in the matter of public funerals in cases where death has been due to contagious disease. This is especially true of the large cities, where sanitary laws are more thoroughly enforced than in rural districts. In Brooklyn, prior to the year 1877, there were no restrictions placed upon the attendance at the funerals of those who died of infectious disease, and the inspectors of the Board of Health, who were directed to be present at such funerals, found in some instances the parlors crowded with friends, the coffins open, and children permitted to kiss the lips of the dead. What was then true of Brooklyn was equally true of many other cities, and is presumably true to-day of all cities and villages where sanitary ordinances do not exist or are not enforced. Ten years ago relatives and friends were invited to such funerals through the public press; to-day, "funeral private" almost invariably accompanies the notice of the death; then the presence of the police was sometimes necessary to enforce the ordinance; to-day public opinion is sufficient to insure privacy.

Another custom which would be more honored in the breach than in the observance is that of standing with uncovered head at the grave, no matter what the weather or temperature may be. Indeed the ground of a cemetery in winter, or in unseasonable weather, is not a fit place on which any but the strongest and most robust should stand. The amount of sickness, even resulting fatally, attributable to exposure at the grave can never be known, but that it is considerable no one can doubt. It is gratifying to note a strong tendency toward reform in the direction of abstaining from such exposure on the part of the old and the feeble, and physicians and clergymen can do great good in encouraging this tendency, by pointing out the serious dangers incurred by those who thus expose themselves. Funeral-reform associations, organized for the purpose of reducing expenses, could well enlarge the scope of their self-assumed task, and lend their aid in abating or modifying the dangers inseparably connected with the present methods of burying the dead.

PHYSICIANS' COMMISSIONS.

There is an impression more or less prevalent among the laity that physicians receive a percentage or commission on their prescriptions. How this impression ever came to exist or on what foundation it is based, has never been stated so far as we know. We presume that every physician has had to meet it once or oftener in his life, and we hope that when such occasion offered he has promptly and indignantly

denied the imputation. That such a practice existed we never for one moment believed, and expected never to have any ground for entertaining such a belief. Recently, however, we have heard from two physicians that they have received checks from a prominent drug-store in the city with the statement that they represented commissions paid to them by the druggist for orders which had been sent for instruments, in one case a truss, and what the other was, was not stated. It is unnecessary to add that in both these instances the checks were indignantly returned. There is little danger that any reputable physician who has been any considerable length of time in the profession, would accept money from such a source, but those who have just entered it might not know that such a practice is regarded as unprofessional, and that it would be beneath the dignity of a true physician to retain money thus obtained. It is, of course, only necessary to call their attention to it, to have the money rejected with as much indignation by them as by their elders.

Where does this commission come from? It is supposable that the druggist deducts it from his own profits, but this supposition is one which few would long entertain. The fact is, we imagine, that the patient pays it. Should the physician accept the commission he would be twice paid, and that oftentimes by a patient who can ill afford this additional expense. The proffer of money under these circumstances is in the nature of a bribe, and is an insult which should be resented. There are doubtless as few druggists who practice it, as there are physicians who encourage it.

SCIENTIFIC EXPERTS.

We desire to call attention to the special meeting of the Medical Society of the County of Kings, to be held on January 14, to consider the relations of scientific experts to the administration of the law. The resolutions, for the discussion of which this meeting is called, were based on the admirable paper of Justice Willard Bartlett, which was published in full in the May number of the Journal. As the Council of the Society will invite representatives of the legal profession, including several judges, to participate in the discussion, the occasion cannot but be one of great interest and importance.

THE CARTWRIGHT LECTURES.

In the recent lectures of Dr. Billings, reference was made to the unreliability of statistics obtained in other ways than by official census. As an illustration of that the instance of Philadelphia was cited. The

population of that city was estimated in 1879 to be 901,380, from which the death rate was computed as 17.17 per 1,000. In the following year, 1880, the U. S. census was taken, and the population then was found to be but 847,170, showing that the actual population in 1879 was 828,032 and the actual death rate 18.68. The estimated population of any city based upon the number of names in the directory, or of houses, or of voters is almost invariably too high. Dr. Billings also called attention to the fact that after corrections are made by the official census, boards of health, and others publishing statistics, instead of making the necessary alterations in the populations and death rates already published, continue year after year to publish the statistics which the census has shown to be incorrect. City officials who, after their attention has been directed to such inaccuracies, persist in the publication of false figures, do it with the desire to have the cities they respectively represent considered as the leading ones of their section in point of population, and the death rate the lowest.

There is one point with which we presume all physicians will agree with Dr. Billings: that there is no good reason why reports of births should be required from medical men. It would be far better and more likely to insure complete returns if others than the physician were required by ordinance to make such reports.



OBITUARY.



WALTER DE FOREST DAY, M.D.



Dr. Day, whose death occurred in New York on November 27th, was best known as Sanitary Superintendent of that city, to which responsible position he was appointed in 1873. He received his medical degree from the College of Physicians and Surgeons in 1863. While yet a student, in 1861, he entered the service of the United States as a medical cadet, and rendered valuable medical aid to those injured in the first battle of Bull Run, in the hospital at Alexandria. Subsequently he had charge of the marine hospital at Portsmouth, Va. He occupied for many years the chair of *Materia Medica* and Botany in the College of Pharmacy of New York, and filled other responsible positions in the hospitals and dispensaries of that city.

PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

The regular monthly meeting of the Medical Society of the County of Kings was held in the society rooms, 356 Bridge Street, on Tuesday evening, November 19th, at eight o'clock.

Dr. A. Ross Matheson in the chair.

There were about seventy-five members present.

The full minutes of the last meeting not being at hand, the Secretary read the report of Council made at that meeting, which, on motion, was approved as read.

The Council reported favorably upon the names of the following applicants for membership :

Drs. John E. Walsh, Bellevue, 1886; Benj. Meade Bolton, Univ. of Virginia, 1879; J. C. Fitzsimmons, L. I. C. H., 1887; Geo. B. O'Sullivan, L. I. C. H., 1887; Lawrence Coffin, L. I. C. H., 1889; Wm. Jarvie Turner, L. I. C. H., 1886; Robert Hunter Duncan, Coll. P. and S., Baltimore, 1885.

The following doctors were proposed for membership :

Purdy Sturges, 440 Ninth Street, Coll. P. and S., New York, 1887; proposed by Dr. A. Ross Matheson—Dr. D. Myerle.

Walter Spencer Fleming, Kings County Insane Asylum, Univ. of City of New York, 1883; proposed by Dr. John L. Macumber—Dr. G. A. Evans.

Arthur Edwin Burns, Kings County Insane Asylum, Bellevue, 1886; proposed by Dr. John L. Macumber—Dr. G. A. Evans.

George Fred Lloyd, Kings County Insane Asylum, Omaha Med. Coll., 1882, Bellevue, 1887; proposed by Dr. John L. Macumber—Dr. G. A. Evans.

Gilman Osgood, Kings County Hospital, Bellevue, 1886; proposed by Dr. John L. Macumber—Dr. John A. Arnold.

Jesse T. Duryea, Kings County Hospital, Bellevue, 1889; proposed by Dr. John L. Macumber—Dr. John A. Arnold.

Wm. A. Fries, Fourth Avenue and Forty-sixth Street, Univ. of Penn., 1872; proposed by Dr. Ernest Palmer—Dr. W. M. Hutchinson.

Walter Morrison Friend, 3 Second Place, Harvard Univ., 1884; proposed by Dr. J. H. Raymond—Dr. W. M. Hutchinson.

William Neuss, 248 Central Avenue, Bellevue, 1889; proposed by Dr. Wm. Gilfillan—Dr. W. M. Hutchinson.

S. S. Brown, 844 Lafayette Avenue, L. I. C H., 1888; proposed by Dr. Robert L. Dickinson—Dr. Charles Jewett.

William C. Schirmer, 366 Grand Street, New York Univ., 1889; proposed by Dr. James L. Kortright—Dr. D. Myerle.

Robert Schmeltzer, 113 State Street, Würzburg, Germany, 1879; proposed by Dr. Arnold Stub—Dr. Ernest Palmer.

W. R. A. Carley, 775 Quincy Street, Bellevue, 1888; proposed by Dr. J. H. Hunt—Dr. D. Myerle.

J. T. Burdick, 459 Gates Avenue, Worcester Med. Coll., 1853; proposed by Dr. Walter B. Chase—Dr. G. R. Butler.

John Sheppard, 81 Division Avenue, Univ. of Penn., 1882; proposed by Dr. Wales L. Carey—Dr. Reuben Jeffery.

Wm. Steward, 188 State Street, Bellevue, 1886; proposed by Dr. E. M. Mosher—Dr. A. Ross Matheson.

H. Bullwinkle, corner of Madison Avenue and Franklin Avenue, Bellevue, 1887; proposed by Dr. John L. Macumber—Dr. G. A. Evans.

The following applicants, having been favorably reported upon by the Council, were declared elected to membership:

Drs. L. P. Grover, Clarence Thwing, F. P. Keyes, Lemuel G. Baldwin, and F. W. Fleischhauer.

SCIENTIFIC BUSINESS.

The first paper of the evening, entitled "The Pathological Processes of the Nervous System," by Landon Carter Gray, M. D., was read, and discussed by Drs. Johnson, Evans, and Eccles.

The second paper, entitled "Inhalations of Oxygen as an Adjunct to Treatment in Pneumonia," by J. M. Winfield, M. D., was read, and discussed by Drs. Eccles, Conkling, Mosher, Westbrook, Kretschmar, and Fox.

The third paper, entitled "A Criticism of the Weigert Hot-Air Treatment in Pulmonary Tuberculosis," by Wales L. Carey, M. D., was read, and discussed by Drs. Westbrook and North.

NEW BUSINESS.

The Secretary stated that at the next meeting a proposed amendment to the By-Laws, providing for the appointment of a legal adviser to the Society, would be read.

There being no further business, on motion, the meeting adjourned.

W. M. HUTCHINSON,
Secretary.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A special meeting of this Society will be held on Tuesday, January 14, 1890, at 8 P. M., to consider the resolutions which were offered by Dr. Raymond at the May meeting. In accordance with a resolution offered by Dr. Kretzschmar, and adopted by the Society, the Council will invite representatives of the legal profession to be present and participate in the discussion. The resolutions are as follows :

Whereas, The medical expert witness is at the present time held in less repute than formerly, and his opinions have lost much of their force with both judge and jury ; and

Whereas, Such diminished respect for the medical witness tends to injure the profession as a whole and to lessen its influence ; and

Whereas, It seems probable that the status of medical expert testimony may be improved by united and harmonious action of the profession looking toward that end :

Resolved, That it is the sense of this society that it is derogatory to the best interest of the medical profession for any of its members to occupy in a legal trial the position of medical adviser to counsel and witness in the case ;

Resolved, That it is the sense of this Society that the physicians who are called upon to give evidence in legal cases, with reference to the existing physical condition of patients, should insist, if it be possible, upon meeting in consultation the physicians to be called by the other side, so that there may be a full interchange of views before they testify.

BROOKLYN MEDICAL MICROSCOPICAL SOCIETY.

The twenty-eighth regular meeting of this Society was held at the Hoagland Laboratory on Wednesday evening, December 4, 1889, the President, Dr. C. Heitzmann, occupying the chair. Dr. L. E. Tieste was unanimously elected to membership, and the names of Drs. Eugene Hodenpyl and Ira T. Van Giesen were proposed. After the transaction of the regular business of the Society, the paper of the evening was read by Dr. E. H. Wilson, on the "Technical Methods for the Central Nervous System."

As the paper will be published elsewhere in the Journal, no abstract need be made of it here. It was warmly discussed by Drs. Shaw, C. Heitzmann, L. Heitzmann, Eccles, Bates and Lennox, the consensus of opinion being in favor of the hæmatoxylin method of Weigert.

After the announcement of a paper by Dr. C. N. D. Jones, on "Villous Tumors of the Bladder" for the next meeting, the Society adjourned.

By order of the committee,

RICHMOND LENNOX,
Secretary.

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.

THE SALICYLATE OF MERCURY TREATMENT OF SYPHILIS.

Bruns-Chanes (*Annal de dermat. et syph.*, 1888, No. 4, *Centralblatt f. Chirurgie*, No. 36).

The author recommends the treatment of the different stages of syphilis after the manner proposed by Silva Arango, *i. e.*, the administration of the salicylate of mercury, both in pill form (0.025 at a dose 2 or 3 times daily), as well as by subcutaneous injections. The inunction of an ointment (salicylate of mercury, 2 : vaseline, 30,0) proved useful in the treatment of the syphilitic products of the secondary and tertiary stages.

CURE OF TETANUS BY MEANS OF ABSOLUTE REST.

E. de Renzi (*Riv chir. e terapeut.*, 1889. No. 1).

The author calls renewed attention to the importance of absolute repose in the treatment of tetanus. In 5 cases treated, 4 resulted in cure. The tetanic patient is isolated in a dark chamber, the floor of which is muffled by means of thick carpets or rugs, the ears are stopped, every manipulation is done, as far as possible, in the dark, and the most rigid silence maintained. The nourishment is restricted to fluids; for severe pain, belladonna and ergot are administered.

PARENCHYMATOUS INJECTIONS OF IODOFORM OIL IN THE TREATMENT OF TUBERCULOSIS OF THE BONE AND JOINTS.

Wendelstadt of Bonn (*Centralblatt f. Chirurgie*, No. 38, 1889).

Clinical observations are supported by bacteriological research. No giant cells are developed in granulation-tissues in the presence of iodoform (Marchand). The contents of abscesses treated by iodoform injections lose their power of infection when placed in the anterior chamber of the eye (Stockum). Tubercular granulations disappear and Koch's bacillus cannot be demonstrated in the abscess-wall, following iodoform applications (Bruns-Nauwerck). W. uses iodoform oil, 5 to 25. If not freshly prepared free iodine is apt to be present. 2 or 3 c. cm. of the oil is injected once a week into the diseased structures.

In case of abscess, the contents of the latter are first removed by aspiration. Injections along fistulous tracts are of but little use. Parenchymatous injections in the surrounding structures are more efficacious.

EXTRA ARTICULAR SUTURE IN FRACTURED PATELLA.

T Myles (The Dublin Journal of the Medical Sciences, Nov., 1889, p. 382).

The author believes that the usual and unfavorable results of fractured patella are due to the treatment. He rejects all of the older theories of failure of union, and gives but little weight to the assertion of MacEwen that this is mainly due to the fact that the pre-patellar portion of the fibrous expansion of the vasti muscles becomes entangled, after being first stretched and then torn in the accident which produces the fracture, in the roughened surface of the upper fragment, mainly. He suggests, as replacing the ordinary method of suturing the fragments by opening the joint, a transverse drilling, subcutaneously, of each fragment, and fixing therein a nickel-plated pin. The fragments are drawn together by means of these pins, and held in position by passing a tape around the projecting ends of the pins in a figure-of-8 fashion, after the manner of a hare lip operation (The abstractor is prepared to assert that, in the large majority of cases of fractured patella the condition described by McEwen will be found to exist. In his experience in suturing these fractures by opening the joint and freely exposing the fragments, he has yet to observe a single case in which this condition did not exist when the fracture was transverse).

OSTEO-PLASTIC EXARTICULATION OF THE FOOT IN CHILDREN.

Prof. W. Rasumowsky, Kasan, (Archiv f. klinische Chirurgie, Bd. 39, Hft. 2).

Realizing the importance of preserving the epiphyseal cartilages of the lower extremities of the tibia and fibula in children, R. proposes to modify the classical operation of Pirogoff so as to avoid sawing off the malleoli. He shapes the surface of the os calcis, which lies between the malleoli when the former is brought into position with the heel flap in such a manner as to give a firm bearing, and eventually an articular surface. A case is related in which, after this procedure, a lad of 8 was enabled to walk and run with facility and without artificial aid; the end of the stump, moved by the anterior and posterior crural muscles, resembling, in its movements, a foot in miniature. Attention is called to the importance of preserving these muscles, and the statement made that longitudinal development of the bones depends, not only upon the epiphyseal cartilages, but also upon the integrity of the surrounding muscular structures.

UPON THE OPERATIVE TREATMENT OF IRREDUCIBLE LUXATIONS OF THE HIP.

K. Kirn (*Beitr. zur klin. Chirurgie von Bruns-Czerny, Kroenlein u. Socin, Bd. IV., Hft. 3*).

K. reports 19 cases of ancient irreducible luxations of the hip, 11 of which were of the backward variety, in which class the greatest amount of functional disturbance is found to exist. He refers to the various operative procedures, among these, incision of the soft parts which seem to aid in the fixation of the bone in its abnormal position. From this method, illustrated by a case of Hamilton's, no result followed. Osteoclasis of the femoral neck gave a favorable result in 6 cases; 2 cases resulted in necrosis of the head. Osteotomy was performed in one case (MacEwen) with good results. Arthrotomy was performed in only 2 cases, but with good result (Polaillon and Vecelli). Resection of the femoral head has been performed twice at Bruns' clinic, one in pre-antieptic twins, which perished, while in the other an excellent result was obtained. In the literature of the subject he finds 12 cases of the latter reported, with 3 deaths and 9 favorable results. Operative procedures are only to be resorted to if the limb is useless or comparatively so. Forcible reductions and osteoclasis are not to be recommended. Osteotomy above or below the trochanter is to be advised. Arthrotomy offers, in recent cases only, hope of success. The best results follow resection, which is the procedure most in vogue.

UPON THE MECHANICAL TREATMENT OF ERYSIPELAS.

Wöfler, (*Wiener klin. Wochenschrift, 1889, Nos. 23-25*).

W. repeats his assertions previously made that strapping the edges of the erysipelatous part with adhesive plaster will arrest the disease. The latter extends to the plaster, but does not pass beyond it; it can be made to completely circumscribe the boundaries of the erysipelas, the plaster need not be placed upon the reddened skin itself. In cases of facial erysipelas in men the hair should be shaved; in women, a sufficiently wide parting of the hair may be obtained to admit of the application of the plaster.

 OBSTETRICS.

BY CHARLES JEWETT, M.D.

ALBUMINURIA AND ECLAMPSIA IN THE GRAVID WOMAN.

Blanc (*Arch. d'obstet. et de gyn., Oct., 1889*) finds in this affection two principal species of micro-organism, several varieties of coccus, and a bacillus. He injected the veins of rabbits with cultures of

these micro-organisms. The cocci gave no marked pathogenic effects. The bacillus caused rapid death of the animal, or grave general symptoms, accompanied with albuminuria. An albuminuric, having bacilli in her urine, gave, by inoculation of her blood, cocci, sometimes in chains and of the same appearance as those the author has found in eclampsia.

He examined the urine and blood of three eclamptic women, always finding what he describes as a lengthened coccus, or better still, a short bacillus. Inoculation of a female rabbit with the blood of an eclamptic caused anuria and prostration. After two other inoculations albuminuria ensued.

In the box in which several inoculated rabbits had been kept and in which two had died, he placed a healthy pregnant rabbit. This animal took sick and miscarried a dead litter. Another, treated in like manner, shared a similar fate. A non-gravid rabbit placed in the cage promptly succumbed. A rabbit, pregnant for eighteen days, inoculated with the blood of another eclamptic died in ten or twelve hours with intense convulsive phenomena after giving birth to one or two dead little ones. Another gravid animal, inoculated with a very small quantity of a bouillon-culture, showed only general symptoms of little gravity, but attended with intense albuminuria and premature birth.

[Readers of the JOURNAL, having cases of puerperal eclampsia in their practice, may make important contributions to the further study of this subject by sending samples of blood from such patients, properly collected and sealed, to Dr. Bolton, at the Hoagland Laboratory.—ED.]

THE DIAGNOSIS OF PLACENTA PRÆVIA BY PALPATION OF THE ABDOMEN.

Dr. H. R. Spencer (Trans. Obs. Soc., Lond.-Am. Journ. Obs., Sept., 1889). In seven cases of placenta prævia the location of the placenta upon the anterior wall of the lower segment was clearly made out by abdominal palpation. In two of these the placenta could not at the time be felt by the vagina. In the remaining four cases abdominal palpation showed that the placenta was not attached to the anterior wall.

The diagnostic signs as given by Dr. Spencer are as follows: In head-presentation with placenta prævia the head cannot be felt where the placenta is situated; may be distinctly felt where the placenta is absent. The placenta, when in front, may itself be felt as an elastic sponge-like mass which keeps the fingers off the head. The edge may be made out having the shape of a segment of a circle. Within the circle all is obscure to the touch; outside the circle the head or other part of the child is plainly felt.

Impulses to the head are obscured where the placenta overlies it, elsewhere are distinct. Combined abdominal and vaginal examination give similar signs.

DIETETICS AS A SUBSTITUTE FOR ARTIFICIAL PREMATURE LABOR.

Prochownick (*Arch. d'obstet. et de gyn.*, Oct., 1889) comments upon the unsatisfactory results of premature labor, so far as concerns the child. The high mortality of infants prematurely born has led him to seek a substitute. This he appears to have found in the old and abandoned practice of restricted diet. He reports in detail three successful cases which he treated, during the last few weeks of gestation, with a dietetic treatment entirely analogous to that of diabetes.

In his first case, perforation, version and premature labor had been successively employed in previous births. The dietetic regimen was pursued for two months before her last accouchment. The result was a small living child, whose cranial vault, though hard, was still plastic. The child remained healthy and grew rapidly.

His second case was a dwarfed and scoliotic woman whose first delivery was by cephalotripsy, the second by difficult version, the child dying in four hours, the third by premature labor, the child dying at the fifth week. In the fourth pregnancy the author placed the patient on the restricted diet during the last five or six weeks. The child was a male and at birth weighed little more than two-thirds the usual weight. It however presented all the signs of maturity so far as regards the diameters of the head. It lived and thrived.

The third case was a secundipara whose first child had been sacrificed by craniotomy. She was placed on the dietetic treatment for four and a half weeks and was delivered at term of an undersized child which lived.

MANAGEMENT OF OCCIPITO-POSTERIOR POSITIONS.

Bataillard (*Arch. d'obstet. et de gyn.*, Oct., 1889). In tedious labor, with occipito-posterior position, B. thinks the imperfect flexion and consequent failure to rotate are due to detention of the occiput by the neck of the uterus or, after complete dilatation, by the caput succedaneum. He advises waiting for two hours after full dilatation, in the absence of emergency. Tarnier's method of reduction should not be attempted till the head is well flexed. He holds that a good forceps seizure is always possible in these cases, though denied by most authors. To accomplish this he passes the guiding hand wholly within the vagina and alongside the head. Cautious attempts may be made with this hand to promote flexion, but must not be pushed too far. The second blade should be carried well back against the posterior

wall of the pelvis till the handle may be easily depressed for locking.

The first traction generally determines complete flexion and partial rotation of the head. We infer that he uses the Tarnier instrument.

THE PORRO OPERATION.

J. Price (*Annals Gyn.*, Oct., 1889). The Porro operation has the following advantages over the Cæsarian section: The danger from the succulent uterus with its incision is removed, hæmorrhage is absent, the operation is more rapid, the technique simpler. The uterine suture is unreliable owing to the instability of the uterine tissue during involution. Possible leakage and peritonitis are inevitable dangers. On the other hand, the *écraseur* adapts itself to the shrinking stump and, more important still, the stump is extraperitoneal. The Porro operation should give better results than ordinary hysterectomy for the following reasons: 1. Absence of adhesions. 2. No implication of any important viscus and therefore less hæmorrhage. 3. Less shock.

The ethical objection to the Porro operation, Dr. Price thinks, does not hold. The woman is not to be regarded simply as a propagating organism. Other relations to family and friends are as important as her procreative power.

Finally, the Porro skilfully performed gives the patient a better chance for life than the classical operation.

TREATMENT OF POST-PARTUM HÆMORRHAGE.

Misrachi (*Arch. d'obstet. et de gyn.*, Oct., 1889) considers the hot intra-uterine douche too slow and advocates the use of a special curette and *écouvillonnage*. He uses a large curette with a serrated edge. As an auxiliary hæmostatic he prefers equal parts of glycerine and tinct.iodin., or of glycerine and lactic acid or creolin to the glycerocarbolic mixture of Doleris. The lactic acid and creolin mixtures he believes to possess remarkable hæmostatic powers. In the event of persistent hæmorrhage or sepsis he places in the uterus a large stick wet with lactic acid, leaving it there for one or two minutes. The hot douche he uses only in case the foregoing measures fail.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M. D.

SENILE HEART.

Balfour (*Edinburgh Med. J.*, Sept., 1889) writes that there are certain affections of the myocardium, due to senile change, that are not usually discoverable during life. Such changes may be included under the terms pigmentary involution, fatty degeneration, aneurism and rupture

of the heart. There is, however, a *senile heart* presenting certain abnormal symptoms and signs. The causes producing the condition result from (1) *changed relation in size and amplitude of the blood vessels*, causing increased arterial tension and slowing of the pulse rate. In advanced life the elastic arteries tend to become rigid tubes, causing an extra strain in the heart; a dilation of the aorta and large arteries follow. Loss of arterial elasticity causes an intermittent capillary circulation to take the place of the normal flow. This causes a condition of obsolescence to ensue.

2. *Relative proportion between aorta and pulmonary artery changes.* The aorta becomes the larger of the two. This causes a diminished pressure through the lungs with a resulting imperfect æration and gradually increasing venosity of the blood.

3. *Senile dilatation* results from the increase of the intra arterial blood pressure. The rigid coronary arteries, causing lack of nutrition, aid in promoting this change.

Manifestations.—The earliest symptoms of the development of senile heart are those depending upon weakness of the myocardium, with manifestations of nervous irritation. The author includes them all under the head of cardiac erethism. This is marked by rapid or irregular cardiac action. A few fluttering beats disturb the regularity of the pulsation. This may be followed by a choking sensation in midsternum, pallor of the face, a tendency to syncope, and a momentary loss of power in the lower limbs.

In certain cases, rapid action alone may be present. This is called *tachycardia*. This condition may pass away or give rise to new forms of cardiac action. These may be :

1. Action continually small, rapid and feeble—*Embryocardia*.
2. Rapidity with extreme irregularity—*delirium cordis*.

Attacks of what is called “fluttering of the heart” occur in these cases, and are really tremor cordis. They may occur without warning and cease quite suddenly. A number of short, sharp and usually incomplete systolics rapidly follow one another, causing a tremulous sensation about the heart; the pulse is small and sometimes not perceptible.

In a few cases the dilated senile heart is accompanied by a slow pulse. This may be when the heart beats are double the rate of the pulse, or be in itself a true *bradycardia*.

The changes in the cardiac muscle and the blood vessels alter the character of the cardiac sounds. When the aorta has lost its elasticity it expands abnormally before each succeeding blood wave, and the weight of the excess of blood in its ascending portion closes the aortic

valves and with unusual force, causing an accentuated sound. The greater state of tension to which the valves are thrown may terminate in separation of the segments of the valves, with regurgitation between them. If the aorta becomes dilated, a systolic murmur may be heard at the base.

When physical examination reveals a more forcible impulse at the lower end of the sternum than in the normal position of the apex beat, with changes in the area of dulness, and accentuated second sounds in one whose arteries are atherosed and show a high degree of intra-arterial blood pressure, there is indication of a heart dilating under permanent causes.

[It is interesting to note that in the original paper from which the above analysis was made the statement is given that an intermittent pulse is rarely found in the senile heart. This statement, with the author's views on the intermittent pulse, as a single factor, published elsewhere, is additional testimony to the theory that this condition means but little, and is in no wise a dangerous element.]

WEIGHTS IN TYPHOID FEVER.

Cochin (Cochin Hosp. Rep.) gives the result of certain observations upon the weight of a series of typhoid fever patients. From these observations it would seem that there was a daily uniform loss, varying in different persons. The existence, in ætiology, of a relation between loss of weight and the amount of food consumed by the patient is denied. The cause of the emaciation is considered to be the long continued elevation of temperature, especially as the losses in nitrogen and weight seem to bear a close relation to the degree of elevation. This view of the ætiology is not strictly adhered to, however, as the statement is made that complications increase the loss in weight, and that the loss in weight will give information as to the action of nutritive substances in fever cases. Gain in weight is considered as a sign of convalescence and as an aid in prognosis.

ACIDS IN THE STOMACH.

Jaworski (Centralblatt f. Med. 1889) gives the following conclusions as to the use of acids: 1. They precipitate mucus. 2. Increase the cellular elements of the gastric contents. 3. Cause effusion of bile into stomach. 4. Stimulate secretion of pepsin but have no influence in increasing the amount of hydrochloric acid. 5. In moderate amount their long continued use produces gastric disturbance. 6. In large amount derangement of function and diminution of gastric juice may result.

The difference in action between alkalies and acids is also given. The former dissolve mucus and decompose pepsin; the latter precipitate mucus and increase pepsin.

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

MILK FROM TUBERCULOUS COWS.

No subject in preventive medicine is receiving more attention at present than tuberculosis.

The following notes of experimental studies are worthy of careful note.

Bollinger (*Centralblatt f. allgm. Gesundh.*) gives the results of his experiments with the milk of twenty tuberculous cows. He tested the virulence of the milk by intra-peritoneal injections in guinea pigs. In five cases of advanced tuberculosis, the milk was infectious four times; in six cases in which the disease was of a medium grade, he got four positive and two negative results; in nine cases where the disease in the cows was in the earlier stages, the inoculations gave three positive and six negative results. Fifty per cent. of the experiments gave positive results. The danger of infection from the milk is greater therefore in the later stages of the disease, and is particularly great when the udder is the seat of tubercles. Bang tells us that he found in the dairy establishments of Copenhagen, within a few months, not less than twenty-seven cases of advanced tuberculosis of the udder. In one of these, in which the milk presented a normal appearance, the microscope revealed an abundance of bacilli. Some of the cover-glass preparations contained so many that two hundred could be counted in each field of view.

Another series of experiments upon the same subject has lately been conducted by Hirschberger, a German physician. He injected the milk from tuberculous cows into the peritoneal cavity and under the skin of guinea pigs.

None of the experimental animals died of septic peritonitis, or other disease than tuberculosis. Fifty-five per cent. of the animals used contracted tuberculosis, and the possibility of spontaneous tuberculosis was carefully excluded.

In cows which were greatly emaciated the milk was nearly always infectious, while in those in fairly good condition about thirty per cent. of the inoculations gave positive results. The milk was thus shown to be infectious even in the earlier stages of the disease or before the udder became diseased.

Dr. Ernst, of Boston, has lately published the results of his investigations upon this subject in the interest of the Massachusetts Society for the Promotion of Agriculture. Thirty-six cows suffering from tuberculosis other than of the udder were used in his investigations, and 117 samples of milk from them were examined; 17 samples from ten different cows were found to contain the bacilli of tuberculosis. Inoculation ex-

periments upon well animals gave positive results in fifty per cent. of the cases treated. Feeding experiments were less successful, but he induced the disease in several calves and young pigs. He reaches the following conclusions: 1. That the milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease.

2. That the virus is present, whether there is disease of the udder or not.

3. That there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis.

4. That, on the contrary, the bacilli of tuberculosis are present and active in a very large proportion of cases in the milk of cows affected with tuberculosis, but with no discoverable lesion in the udder.

PREVENTION OF CONSUMPTION.

The following from a circular distributed by the State Board of Health, of Maine, is a fair sample of what is being done by a number of the State and local boards of health towards restricting the spread of consumption.

The Restriction of Infection.—It should be impressed upon consumptive patients and other persons living with them, that *the sputum (what they cough up) is dangerous and must be properly disposed of.*

The sputum should be received in a spit-cup or spittoon containing a little water or disinfecting fluid, and must never be spit upon floors, carpets, or received in handkerchiefs. If a disinfecting solution is used, corrosive sublimate is unsuitable, chloride of lime is efficient, but irritates the air passages; carbolic acid (solution E.) with five per cent. of tartaric acid or hydrochloric acid, will be the best disinfectant generally available.

If occasionally it is necessary to have handkerchiefs or cloths soiled with the sputum they should be boiled as soon as possible, and before drying.

The spittoon should be of such shape that the sputum may easily fall into the water without soiling the sides of the vessel. For patients not able to sit up, a small spit-cup with a handle should be used. When flies are present, it should be covered.

Spit-cups and spittoons should be emptied and cleansed often with boiling water and potash soap. When the house has a drainage system, the contents may be poured down the water-closet or slop-hopper; when it has not, they should be buried in ground which will not be turned up soon.

The sputum should not be thrown out upon the surface of the ground near inhabited places, nor on manure heaps, nor where animals may get it, nor where it may soil animal food.

Boxes filled with sand or sawdust should not be used. Cheap wooden or pasteboard spit-cups are now on the market, one of which may be burned daily or oftener with its contents as a convenient way of disposing of the sputa.

A pocket spit-flask of small size has been devised, which may be used away from home.

The floors, woodwork and furniture of rooms in which consumptive patients stay, should be wiped with a damp cloth, not dusted in the usual way.

The patient's clothing should be kept by itself and thoroughly boiled at the washing.

The patient should be made to understand that in neglecting these measures, he is imperiling his friends, and at the same time diminishing very much his own chances of recovery by re-infecting himself with the inhalation of his own dried and pulverized sputum.

After a death from this disease has occurred, the patient's room, clothing, and bed should be disinfected. For this purpose boil all bed and personal clothing, or disinfect them when practicable in a steam disinfectant; wash furniture, woodwork, walls, and floors with carbolic acid solution (solution E), and thoroughly expose the rooms to light and air.

If raw milk is used as food, especially if it is to be given to children, an assurance should be had that the cows which produce it are perfectly healthy and subjected to healthful treatment.

When there is any doubt as to the health of the cows which furnish the supply, the milk should be boiled before use.

Thorough cooking will remove all danger of tuberculosis through the medium of the meat supply.

Tuberculous mothers and those inclined to consumption should, under no conditions, nurse their babies.

To Guard against Contracting the Disease.—By observing the rules which are expressed and suggested in the foregoing, the principal, if not all danger of infection may be avoided.

Whatever has a tendency to undermine the general health increases the susceptibility to the infection and diminishes the power of recovery from incipient tuberculosis.

A fact abundantly shown in the dissecting room is, that many persons dying of other diseases, have had tuberculosis and have recovered in its early stages.

This tendency to recover is greatly strengthened by the habitual breathing of pure air. Means should be provided for the abundant ventilation of inhabited rooms, particularly of sleeping rooms, school rooms and churches.

The open air treatment of consumptives and those who are threatened with tuberculous disease, has given much better results than any other. Particularly in Germany, and to some extent in this country, such treatment has been systematized in "sanitaria" for consumptives. Here the patients have the advantage of a regular life, nutritious food and such exercise as they can bear without fatigue; but the chief curative agent is an abundance of fresh air. Even in the coldest of winter weather, patients, after a period of gradual habituation, and always guided by the judgment of the physician, pass the whole day walking in the open air, or sitting or lying on resting places wrapped comfortably in blankets. Usually no claim is made for advantages of climate. *An abundance of pure air is the all important thing.*

TRICHINÆ IN SWINE.

Prof. E. L. Mark has recently published the results of the examination of 3,064 hogs raised in the vicinity of Boston, Mass. (Report State Board of Health, Mass., 1888). The examination extended over the five years, 1883 to 1888. The results show that 14.07 per cent. of the males and 10.61 of the females examined were infected with trichinæ, or 12.86 per cent. of all examined. Similar examinations of Western hogs have shown only from two to three per cent. to be infected. Prof. Mark reaches the conclusion that this difference is probably due to the character of the food given to those raised in the vicinity of Boston and presumably in the vicinity of other large cities. Of the fifty-six raisers of the hogs examined by him, fifty-one fed city offal. The source of the infection he believes to be in the uncooked meat found in kitchen garbage. It would be interesting to know the condition, in this respect, of the large number of hogs fed upon this food in and about the other large cities.

ADULTERATION OF DRUGS.

That the practice of adulteration is not confined to foods seems evident from the reports of various sanitary authorities. In the Report of the State Board of Health of Massachusetts, for 1888, we are told that of 4,592 articles examined during the last six years, 1,736, or 37.8 per cent., did not conform to the statutes. In 1886, 47.8 per cent. of the samples examined were adulterated or varied from pharmacopœial standards. The lowest percentage of adulteration found in these years was in 1888, when 26.4 per cent. of articles examined were adulterated.

In the State of New York, during the year 1888, 505 samples of pharmacopœial preparations were purchased on prescriptions with the following results:

Good quality, 43.8 per cent.; fair quality, 17.4 per cent.; inferior quality, 26 per cent.; not as called for, 11.6 per cent.; excessive strength, 1.2 per cent.

We mention, as examples of these examinations, the following cases:

Seventy-two samples of *ether fortior*, U. S. P., showed thirty-four to be of good quality, eight of fair quality, and thirty of inferior quality.

Fifty-three samples of *spiritus etheris compositus*, U. S. P., were purchased. Three proved to be "sweet spirits of nitre," eight were of good quality, five of fair quality, and thirty-seven of inferior quality.

These articles were dispensed upon receipt of a physician's prescription, and therefore should have been what was called for.

PATHOLOGY.

BY J. M. VAN COTT, JR., M.D.

PATHOLOGY OF SYPHILIS OF THE POSTERIOR COLUMNS OF THE CORD.

Eisenlohr (Centralbl. f. d. med. Wissenschaft, No. 45, Nov. 9, 1889) states that, in cases of so-called *tabes dorsalis* in syphilitic patients, there is always a possibility of there being no typical posterior sclerosis, but degenerative lesions confined to certain definite circumscribed areas of the posterior columns, with complication of bordering portions of the lateral columns, and the so-called root-zones. His conclusions are based upon autopsy findings in two cases. The lesions in the first case were confined to the posterior aspect of the pia spinalis, the posterior columns and bordering portions of lateral columns, and root-zone of the cord; lesions of cord confined to an area of $1\frac{1}{2}$ c. m. at the height of the eighth dorsal vertebra. The lesions of the second case involved the pia cerebri and pia spinalis and the posterior aspect of the cord in several well-defined and circumscribed areas. In both cases the clinical symptoms were almost exactly those of *tabes dorsalis*.

POLYPOID SARCOMA IN CHILDHOOD.

Kolisko (Centralbl. f. d. med. Wissenschaft, No. 45) remarks the connection between the peculiar polypoid sarcomata of the vagina of children and the papillary nature of the foetal vagina at the fifth month. Their resemblance puts him in mind of Conheim's theory of "arrested development" in the etiology of tumors.

He says the surest sign of malignancy in these tumors is their tendency to recurrence. The only hope of relief is extirpation of a very large margin of vaginal tissue around the recurrent tumor. Less radical measures will not prevent recurrence (because of the tendency to discontinuous growth). Death in fatal cases occurs either from retention of urine, peritonitis, or (more rarely) *asthænia*.

PERFORATION INTO PLEURAL CAVITY OF A PERITYPHLITIC ABSCESS: PURULENT
PLEURITIC EXUDATE, MIXED WITH FÆCES.

E. Grawitz (Berl. klin. Wochenschr., 1889, No. 32) reports the case of a female, aged thirty-seven, in which the autopsy revealed fæcal impaction of the appendix vermiformis, with inflammation and ulceration of the same, followed by perforation and a perityphlitic abscess.

The pus from this location mixed with fæces had burrowed extensively upward through the retroperitoneal tissues, behind the right kidney, and formed an intra-diaphragmatic abscess, which finally broke into the right pleural cavity. Previous to perforation of the pleural side of the diaphragm, there appeared, on one side of the diaphragm, a fibrinous perihepatitis, on the other serous pleurisy, which was diagnosed, ante-mortem, by hypodermic puncture.

ETIOLOGY OF CANCER.

F. Bracella (Bulletin delle sc. Med., 1889) examined, with every precaution and using various culture-media, six neoplasms for germs, as follows: three carcinoma of breast, one primary carcinoma of liver (?), and one carcinoma, and one sarcoma testis. Results in every case negative.

Exceptionally he got bacteria and micrococci traceable to contamination, *e. g.*, pus-organisms in an ulcerating breast. He concludes that Scheurlen's bacillus is not specific, and that, if cancer and sarcoma are infectious diseases, the infection is of a nature hitherto unknown.

CONTAGIOUS NATURE AND MODE OF PROPAGATION OF CANCER.

Armandit (Union Med., 1889, No. 52) under this title makes the following statements: The population of Saint-Sylvestre-de-Corneille (Normandy) is about 398 souls. From 1880 to 1887 there were 74 deaths, 11 of which, or 14.88 per cent., were of cancer. Comparing percentage with that of deaths of carcinoma in Paris, he finds death of this disease to be three times as frequent in the former place as in the latter. Of the eleven deaths in Saint-Sylvestre, ten were in males and one female. Ages of patients ranged from sixty-one to eighty-four years. In eight cases the stomach, and in one each the face, throat (sarcoma), and mesentery, were the seat of the lesion. Five cases occurred in various parts of the village and six adjacent in a bordering revier.

During twenty-two months three patients died in the village (one sarcoma, two gastric cancer). Previously, in the course of three years, there were two deaths of gastric cancer. The houses of these patients were close together. No heredity proved in any of these patients.

Two were brother and sister. No alcoholic habit. The *locus in quo* of the disease then changed from *high ground* to *low*, in the direction of the water-course. The author believes the water to have been infected above with "cancer virus," coming from dung-hills on which were thrown vomited material and fæcal matter from the first series of patients; that the virus was active for an indefinite time; and that the thus-infected water, being consumed by the second series of patients on low ground, gave to them the disease.

A CASE OF GASTRITIS CATARRHALIS CHRONICA CYSTICA PROLIFERANS.

Langerhans (Virchow's Archiv) describes a rare case of extensive lesion of gastric mucous membrane, in which the mucosa is seen, both macroscopically and microscopically, to be much thickened and covered with a tenacious mucus. The gastric tubules are greatly lengthened, run a spiral course, and some of them evidently dilated, others blending with each other and forming large cysts. There is mucous degeneration of the glandular epithelium, with hyperplasia and atrophy of the glandular epithelium, and hyperplasia and atrophy of the intra-glandular tissue; also widespread catarrh, affecting the entire mucosa, excepting a small portion covering the lesser curvature. The author regards the cause of the cystic degeneration to be, not the plugging of the ducts of the tubules with mucus, but partly disease of the glands themselves, through improper emptying of them of their tenacious secretion, thus promoting dilatation and spiral lengthening; and partly atrophy of intra-glandular tissues.

A SERIES OF CASES OF CANCER HAVING PECULIAR PATHOLOGICAL INTEREST.

Hansemann (Berlin, Virchow's Archiv, Bd. 17, pp. 1-51, 209-227) reviews in brief an interesting series of cases of cancer, with particular reference to their primary location and metastasis:

1. *Cancer-Metastasis, through Capillary Embolism.*—Three cases, in which numberless capillary emboli were observed throughout the body, including the bones.

2. *Cases of Rare Tumor-Metastases*—Two cases of secondary gastric cancer, one of secondary ovarian cancer, and one of metastasis in the tonsils. Primary tumors found in first, third, and fourth cases, in the mammary glands; in second case in the œsophagus.

3. *Etiology of Epithelial Cancer.*—Three cases of epithelial carcinoma, with previous and lasting irritation:

- (a) Case of epithelial carcinoma of the heel, after mal-perforans.
- (b) Case of primary liver-cancer, in the site of pressure of an ancient fracture of the ribs.

(c) Case of primary cancer of liver in the site of a chronic contracting perihepatitis.

4. *Histogenesis of Carcinomata*—

(a) Beginning flat-cell epithelial cancer of the posterior lip of cervix uteri.

(b) Commencing cylindrical epithelial cancer of pylorus.

Both cases furnished remarkable autopsy findings, with ample proof of the origin of the cancer-cells from the epithelial cells of the mucous membrane, namely, of the glands.

5. Two cases of perforation of the aorta by œsophageal cancer. Sudden death from hæmorrhage.

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M. D.

PTERYGIUM.

Alt (Am. Jour. of Ophthal., March–April, 1889,) ascribes the formation of pterygium to the development of microbes in a corneal ulcer which becomes covered with an adherent fold of conjunctiva. These microbes have a tendency to grow into the corneal tissue, and cause a gradually extending ulceration in this direction. The adherent fold of conjunctiva is “dragged on the cornea by the continued progress of microscopical death and attempted repair in the corneal tissue.” He ascribes but a secondary influence to Theobald’s theory of increased conjunctival congestion over the insertion of the recti muscles, and to Young’s view of a protective contraction of the orbicularis, by which the eye is shielded from irritants except “over the centre of the cornea and a small strip to the nasal side.”

To avoid the mechanical irritants which might start an ulcerative process that could lead on to pterygium, protective spectacles might be worn, but Alt does not favor their use. Antiseptic washes used night and morning are, however, of service. For pterygia already developed, Alt favors the following method of operation. After careful disinfection of the conjunctival sac, lids, lashes, etc., with corrosive sublimate solution (1-2500), he dissects under cocaine the pterygium from the cornea, and with scissors excises it together with an angular piece of the conjunctiva. The conjunctiva is then freed somewhat and the edges of the conjunctival wound brought together as neatly as possible with one or two sutures. He then cauterizes the “uncovered

portion of sclero-corneal tissue and the loss of substance on the cornea" with pure carbolic acid. This after-treatment consists simply in the instillation of gradually weaker bichloride solutions (1 3000-5000) every few hours for several days, the stitches being removed on the fourth or fifth day. He has found the results of this method "all that could be wished for."

INFLUENCE OF LIGHT ON THE EYE AND SKIN.

Various papers have appeared from time to time on the ophthalmia produced by the electric light (effects similar to those seen in the so-called snow blindness), but the responsibility has not been placed either upon the chemical, heat or luminous rays. Widmark, in papers published in the Transactions of the Biological Society of Stockholm and abstracted in the Ophthalmic Review (June, 1889), reports conclusive results obtained from original experiments, and ascribes the irritation to the direct action of the light, and chiefly of the chemical rays, upon the anterior portion of the eye, or upon the skin. It is not due in a reflex way to the effect of the light upon the retina.

EXCEPTIONAL FORMS OF CHOROIDITIS.

At the January meeting of the Ophthal. Soc. of the United Kingdom, Mr. Jonathan Hutchinson read a paper on this subject, which has been reported in the Ophthalmic Review for March, 1889. He offered the following clinical grouping of the different forms of choroiditis, and then spoke at more length of certain of the less common varieties, these latter remarks being here incorporated in the original list.

1st. Choroiditis of myopia, usually central at yellow spot or around the optic disc, but occasionally in scattered patches. The chief factor in diagnosis is the presence of myopia of high degree.

2d. Choroiditis senilis centralis ("Tay's" choroiditis) always central and never causing denudation of large areas. Occurs only in those past middle age, but is sometimes simulated in syphilis.

3d. Choroiditis as a family disease may occur in childhood or middle life, and in various forms. Changes are usually aggressive. In some of the cases used to illustrate this form, there were also mental and nervous disturbances, as failure of intellect or paraplegia. He compares these cases with Kaposi's disease, retinitis pigmentosa and other maladies, which go to prove that under some law of inheritance the children of certain couples may possess by structural idiosyncrasy a weakness of certain tissues and organs which renders them liable to disease at a certain age.

4th. Choroiditis in early periods of syphilis, analogous to the exanthematous eruptions of secondary syphilis, always in scattered patches and usually symmetrical, may be completely cured by treatment.

5. Choroiditis in late periods of syphilis, analogous to the tertiary skin eruptions, often not symmetrical, and always serpiginous and aggressive, may be benefited by treatment, but not often cured.

6th. Choroiditis of inherited syphilis, often affects only the periphery of fundus, and may occur in either of the two preceding forms.

7. Choroido-retinitis, simulating pigmentosa. This group includes cases resulting from blows, and many of those due to inherited syphilis. It is almost always aggressive and attended by changes in the disc.

8th. Choroiditis without obvious cause, usually but not always occurring in young adolescents, and being after an interval symmetrical. Changes are often serpiginous as in tertiary syphilis ("lupus of choroid"), but sometimes disseminate. Only distinguishable from syphilitic cases by the absence of any specific history or symptoms. He would adduce evidence of the existence of this class of cases, yet must admit that he does not feel quite so certain that there are cases which resemble syphilis and yet are not syphilitic. Specific contamination is often effected without the patient's knowledge, and as regards inheritance it is not always possible to find its proof. These exceptional cases should be carefully recorded and the facts sifted, both to decide the syphilitic question and perhaps to discover other antecedents which may be the cause of the disease.

9th. Hæmorrhagic choroiditis, very rare, seen in growing adolescents and in sexual disturbances. Analogous to the cases of recurring vitreous hæmorrhages, and sometimes associated with such hæmorrhages.

10th. Choroiditis with iritis and cyclitis, characterized by extending with definite recurrences through the whole life, and causing progressive failure of sight. Of a similar nature to the relapsing cyclitis so often associated with chillblains, and sometimes seen with inherited gout.

11. Choroiditis following blows in the eye, to be distinguished by the scars caused by lacerations. A progressive form of choroido-retinal disorganization, and always limited to one eye.

12th. Tubercular choroiditis, not proved to be aggressive. Perhaps the "lupus of choroid" referred to under the eighth group may be associated with tubercle.

In conclusion Mr. Hutchinson said that his endeavors to find guiding symptoms to distinguish specific from non-specific choroiditis

had been without success, and also referred to the difficulty of deciding as to the activity of choroidal inflammatory processes. Almost the only sign implying aggressiveness was the existence of a narrow line of yellowish white around the patches, and this was not always present. Mercury and iodides were often of great service in cases which at first sight seemed hopeless, and whatever the stage or diagnosis, be the case specific or not, experience had shown him the advisability of a prolonged trial of mercury.

DISEASES OF THE THROAT AND NOSE.

BY WM. F. DUDLEY, M.D.,

ADENOID VEGETATIONS IN CHILDREN—THEIR DIAGNOSIS AND TREATMENT.

Hooper, Franklin H., Boston Med. and Surg. Jour., March, 1888. This paper was read before the Boston Society for Medical Observation in February, and again by request before the Laryngological Section of New York Academy of Medicine in March. The naso-pharyngeal cavity of the child has always been, and is, even at the present time, a much neglected region. Hidden from sight, this important region has been left practically unexplored. Nevertheless, the cause of obstructed nasal respiration in children, in the majority of instances, will be found to be in the naso-pharyngeal cavity, and not in front of it, in the nasal chambers, nor below it in the pharynx.

Imperfect nasal respiration in the child means imperfect health and imperfect development, with danger of permanent structural changes being excited in the middle ear or in other parts of the body. The symptoms of the complaint are difficult breathing, especially at night; dead voice, irritability, lack of energy, and, in the majority of cases, deafness. The child is a mouth breather. Its facial expression is dull and stupid, oftentimes idiotic. The faucial tonsils, similar in structure to adenoid growths, are very apt to be simultaneously hypertrophied; symptoms peculiar to adenoid vegetations have in former days been graphically described, but attributed wrongly to enlarged faucial tonsils. Excision of the faucial tonsils does not always relieve patients of their difficult breathing. To be certain of the presence of adenoid growths where posterior rhinoscopy is not practicable, the forefinger should be passed gently up behind the soft palate. The growths will be felt as soft, uneven masses, which bleed readily, and on withdrawing the finger, it is commonly covered with blood. The method of treatment which Hooper considers best for a child when

there is a large mass to be reached, and which he carried out with great satisfaction in 104 children, of ages ranging from twenty months to fourteen years, is as follows :

The child is thoroughly anæsthetized ; it is seated upright in the lap of an assistant, the operator being seated opposite to it. The child's mouth is held open by a small sized mouth gag, inserted between the teeth on the right side, any accumulation of mucus in the pharynx to be wiped out. The operator should now pass his index-finger up behind the soft palate and assure himself of the quantity and situation of the growth. Then gently pulling the soft palate forwards and upwards by means of a palate-hook, a post-nasal forceps is introduced closed into the naso-pharyngeal cavity. The blades are then opened, the mass grasped and pulled off either by direct traction or by a slight twisting movement of the forceps, but under no circumstances is force to be used. If there is much bleeding after a portion of the mass has been removed, wait until it has ceased, and then proceed with the operation. This it is usually necessary to do from three to six times before the cavity is cleared out. If proper care is taken there is no danger of blood being sucked into the larynx. The blood does not come with a gush, but will be seen slowly trickling down the posterior wall of the pharynx. The danger in operations about the mouth is from a clot of blood becoming wedged in the glottis, and it is easy to guard against its formation in this operation. There is more to be feared from vomited food lodging in the larynx than from a clot of blood. The ether, therefore, should always be administered on an empty stomach. As soon as its effects have passed off, the patient is practically well. If any after treatment be necessary, it will consist of tonics and a detergent wash for the nose. The removal of these growths, however, is not alone essential to the good health and personal appearance of children, for their indelible traces are often seen in adults, and its marks are carried through life. Dr. Chatellier has called attention to the deformities of the bones of the face and nose from neglected adenoid growths. He points out that the air cavities, as the frontal, sphenoidal and ethmoidal sinuses and the antrum of Highmore, cease to develop when circulation of air through the nose is interfered with, and hence the dimensions of the face are altered. There is no other disease in the domain of him who confines himself to the upper respiratory tract, the treatment of which is attended with more satisfaction to the operator, or with more permanent relief to the patient than this.

HÆMORRHAGES FROM PHARYNX AND LARYNX, AND OTHER HÆMORRHAGES
THAT SIMULATE THESE.

Percy Kidd (*British Med. Journal*, Sept. 15, 1888). The causes of hæmorrhages from the larynx and pharynx may be divided into general and local. The first class includes diseases characterized by changes in the blood and in small vessels, as purpura, leukæmia, and pernicious anæmia. The second group comprises ulceration of various kinds. The discharge of blood from first cause rarely assumes important proportions. The second cause gives more serious results, though here also dangerous bleeding is uncommon. The dilated veins so frequently met in the pharynx may possibly permit a slight oozing of blood sufficient to streak the saliva, but require no further notice.

Cancerous ulceration is more liable to give rise to bleeding than any other form of ulceration. Five hundred necropsies on phthisical patients, including fifty per cent. of laryngeal tuberculosis, did not furnish a single instance of laryngeal hæmorrhage. Most of the so-called hæmorrhages from the throat occur in persons suffering from early pulmonary phthisis, the blood being derived from the lung. The explanation of this mistake is probably to be found in the belief that when hæmorrhages take place from the lungs, physical evidence of pulmonary disease must be forthcoming. A complete absence of physical signs of phthisis does not preclude the existence of pronounced pulmonary lesions. Valvular affections of the heart and pulmonary hyperæmia may give rise to hæmoptysis. Bleeding from nose is apt to be mistaken for pharyngeal or laryngeal hæmorrhage, especially if occurring during sleep. The active hyperæmia of the erectile tissue of the nose, which is the immediate cause of bleeding, has in all probability intimate reflex relations with menstrual function. In summing up, Kidd expresses his belief that excluding the bleeding that may complicate ulcerating carcinoma, suppuration or traumatism, hæmorrhage from throat is rare and devoid of importance. In most cases reported the blood comes either from the lung or from the cavity of nose or mouth.

Scanes Spicer (London) describes cases of rupture of varicose veins at base of tongue, occurring in persons past middle age and addicted to use of alcohol.

Cartaz (Paris) reports case of bleeding from enlarged vein in posterior pillar of fauces, another from syphilitic ulcer in post-pharyngeal wall.

ROLE OF THE VARIOUS TONSILS.

Scanes Spicer (London) *Brit. Med. Jour.*, Sept. 15, 1888. The tonsils have two functions. The first it possesses in common with

ordinary lymphatic glands, namely, a leucocyte manufactory for the supply of blood with corpuscular elements. The second and more important function is absorption of buccal fluids which accumulate in the crypts and so prevention of fluid waste in the economy. The pharyngeal and lingual tonsils and discrete follicles of the pharynx hold an analogous function with reference to spent nasal and lachrymal secretions; the pharyngeal tonsil when the body is horizontal and the lingual when vertical. The author refers also to Dr. Horace Dobel's statement that the function of the uvula is to drip or conduct the nasal secretions on to the base of the tongue in front of the epiglottis.

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

STERILIZED MILK.

William H. Wood, M. D. (N. Y. Med. Journ., Nov. 30, 1889), writes:

"Cows' milk, when pressed from the udder, is as thoroughly aseptic, and hence quite as innoxious, as breast-milk. It absorbs impurities only upon exposure, but absorbs them so promptly and rapidly that ten minutes in foul air or unclean receptacles may render milk poisonous; and even under the most favorable circumstances it cannot be kept entirely free from germs, more or less noxious. * * *

"While the sterilization of milk robs bottle-feeding of its most imminent danger, it is in infants feeding by no means the only requisite to sound health and a vigorous development. Sterilized milk possesses the important negative virtue of being absolutely innoxious; but it too often lacks the necessary positive quality of adequate richness."

The writer at this point urges the use of a good milk only, and advises that from Jersey cows. In our opinion, milk from this breed of cows is too rich for many feeble babies. Inquiry seems to show that the best breed of milch-cow for most babies is the Ayrshire.

"It is a great gain if the milk to be used by children, invalids, or travelers can be sterilized in the country as soon as it comes from the cow and then be transported to town in the sterilizing bottles. * * * If the milk is not of a grade to yield at least twenty per cent. cream, cream should be added to it in the proportion of one ounce to three of milk." * * *

The writer describes a sterilizing apparatus manufactured by Frazer & Co. The bottles are strong (each holding enough for one meal), and have rubber corks, into central holes of which fit glass stoppers. The bottles, filled with the fresh milk and having in them the perforated rubber corks, are put into a wire rack. This rack is put into a covered pan having in it cold water to within two inches of the mouths of the bottles. Then the water is boiled for ten minutes, the glass stoppers inserted in position, and the water boiled for twenty minutes longer, after which the bottles are slowly cooled. The writer states that milk so sterilized will remain sweet from one to three months, and emphasizes the fact that *all* milk, whether in country or city, should be sterilized, and adds :

“When all milk which is given to a child is sufficiently sterilized, it does not suffer from bowel trouble nor from ‘sour’ stomach, and it forms no indigestible curds, since cows’ milk, after it is sterilized, curds in small soft flakes, as mothers’ milk does. An infant, with ordinary good heredity, who is thus fed with creamy, sterilized milk, will go through with teething and suffer no disturbance or inconvenience greater than the teasing irritation of tender gums.”

SHORTENING THE LARYNGEAL SPASMS IN PERTUSSIS.

(Arch. of Gyn., Obstet., and Pædiatrics, Nov., 1889.)

During whooping-cough spasm every inspiration is impeded; this is due to tonic convulsions of the laryngeal muscles. As soon as air is admitted, all choking, due to the congestion, etc., disappears.

Dr. Naegeli, for relief, modifies Herberg’s plan of raising the upper jaw to admit air, as follows: With thumbs on the chin, and fingers on the rami of the lower jaw, the jaw is moved forward and downward, while the head is drawn backward. Or a nurse, standing behind the patient, depresses the lower jaw with one hand while she raises the head with the other hand. When the upper jaw is raised, the child must draw a deep breath. Naegeli says if this plan is tried when a spasm comes on during sleep, the child will be relieved without waking.

CAUSE OF DIARRHŒA MORTALITY IN LEICESTER DURING THE SUMMER OF 1888.

(London Lancet, June 15, 1889.)

During this summer there was less sunshine and high temperature than in previous summers, but rain was quite continuous in July and August. Deaths from diarrhœa, though many, were less than in previous years. Dr. Tomkins, health-officer, believes that the contamination of the soil, especially in the lower part of the town, is the principal cause of the mortality, and states that he has noted the onset of diarrhœa when the temperature of the soil, at the depth of one foot, has reached 60° F. Dr. Ballard says the rise begins when the mean temperature of the soil, at the depth of four feet, is about 56° F.

GYNAECOLOGY.

BY A. H. BUCKMASTER, M. D.

Dr. Galabin (Trans. Obstet. Soc. of London, Part II., March, April, and May, 1889), speaking of the difficulty of rendering the vagina aseptic, says: "We are told that a drop of normal mucus from the cervix of a woman at the end of pregnancy, when drawn with a sterilized platinum rod across nutrient jelly, may produce as many as two hundred colonies of different forms of bacteria. All who have tried to render the vagina aseptic, in the sense of being sterilized, for gynecological operations, will know how difficult this is to accomplish." He quotes the researches of Steffek, which show that no number of douches of perchloride of mercury will render the vagina aseptic at the end of pregnancy. To effect such a result, it is necessary to scrub vigorously with two fingers, not only the vagina, but the inside of the cervix, while a douche of at least a litre of the antiseptic is being used. Even this produces only a momentary effect, unless it is followed up afterward by the use of at least four or five douches at intervals.

The assumption from this is that these microbes may be regarded as innocuous.

A CASE OF TUBAL PREGNANCY TREATED BY THE INTERRUPTED GALVANIC CURRENT.

Dr. George M. Edebohes (Med. Rec., Dec. 7, 1889) made the diagnosis of ectopic gestation for the following reasons:

1st. Absence of menstruation for six weeks in a woman who was always regular, accompanied by slight morning sickness.

2d. The development and rapid steady growth of a tumor in the region of the tube, where it was positively known that nothing had previously existed.

3d. The accompanying of this development by metrorrhagia, labor-like pains, and the passage of shreds.

The case was seen by Dr. T. Gaillard Thomas, who agreed in the diagnosis, and the case was treated by the passage of a slowly interrupted galvanic current, seventy-five milliamperes, applied ten minutes; six séances in all with about forty-eight hours interval. At the end of six months the mass has entirely disappeared and the patient has recovered from all unwelcome symptoms.

AN OPERATION FOR REMOVAL OF AN EXTRA-UTERINE PREGNANCY PREVIOUS
TO RUPTURE.

Dr. Theophilus Parvin (*Annals of Gyn.*, Nov., 1889) reports a successful operation for the removal of the fruit-sac previous to rupture. The patient, a multipara, menstruated on July 29th, and in the latter part of August and September she suffered from nausea, and believed herself pregnant. In September she had occasional violent attacks of pain low down on the left side, followed by soreness; some fragments of membrane had been discharged. A tumor was discovered adjacent to the somewhat enlarged uterus, on the left side. There was great sensitiveness to pressure in the lower part of the abdomen, on the left side. The gestation-cyst included in the tube was removed, and the patient made a good recovery.

[This case and the one preceding illustrate the two methods of treating this condition.]

CURE OF AMENORRHŒA BY SHOCK.

Dr. E. T. Collins (*Brit. Med. Journ.*, Oct. 26, 1889) reports the following case: M. M., single, aged thirty-five, healthy and robust girl, suddenly ceased to menstruate, two and a half years ago, without apparent cause. No suspicion or indication of pregnancy was present. She did not complain of any subjective symptoms, except monthly, when slight headache, backache, and malaise were felt for a few days. Medical treatment gave no results. Last June, returning in the evening from a country walk, she was suddenly alarmed by a tramp on the roadside. The catamenia commenced that evening, and has continued normal at the last three periods.

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M.D.

Taking a general review of the past year, it must be conceded by all conversant with the subject, that never since dermatology has come to be studied and considered as a special branch of medicine, has there been such a record as during 1889.

Four large scientific bodies have met in as many different countries for the purpose of reading papers and interchange of views on matters dermatological, inclusive of syphilis and its manifestations. In order of time these were:

(1) The Germano-Austrian Dermatological Society's first meeting took place at Prague, June 10th and 12th, and was quite largely attended. A few foreign dermatologists were present, but most of these

were, as the name of the Society would warrant, of Austrian or German birth, etc.

(2) The Dermatologic Congress held in Paris, August 5th to 10th inclusive, next in point of time, but decidedly first, in order of importance. This was held under the auspices of the Exposition authorities, the lamented Ricord being named as President. All the distinguished dermatologists and syphilogues of France took part; a large number of English, German and Americans also in attendance. The total membership of those having an active interest was about 200.

(3) The American Dermatological Association held its thirteenth annual meeting this year at Boston, September 17th, 18th, 19th, which was numerously attended, and before which matters of great interest came.

(4) The meeting of the section for dermatology of the "Society of German Naturalists and Physicians" was held in Heidelberg, September 18th to 20th inclusive. This was during the sixty-second meeting of the parent Society; but the first of the section; thus recognizing as it were the necessity of such. A well attended and interesting gathering.

The subjects taken up for consideration in most of these learned bodies have been often, of course, abstruse, and at first sight interesting only to the illuminati; but out of the divers opinions, and consequent clashing of such, great good may be expected, all tending finally to clarify and simplify the subjects; just as for instance in the matters of syphilis, one has only to go back, say thirty years, to see how many and various were the opinions on its manifestations and those of kindred diseases in the minds of men equally sincere and learned.

The length and duration and best methods of treatment of specific troubles, with a view to avoidance or cure of their dermatological lesions, were much written about and discussed at the meetings as given above; as were also leprosy, lupus, the distinctions of the lichen group, and that of pityriasis rubra and the general exfoliative diseases of the skin.

Much was done to conduce to the making of the approaching Congress at Berlin (1890) a success, in the matter of well-considered papers on these and other matters.

Philippe Ricord, October 22, 1889.—The necrology of the year is rendered illustrious by one name, "Ricord," who died on the above date full of age and honors. An eloquent tribute to his memory is given by Hans von Hebra, son of the famous professor of same name, in the Monatshefte für Practische Dermatologie, November 15th, 1889.

It will be a surprise to many to know that Ricord was by birth an American, being born in Baltimore in the year 1800, his parents having

been driven from France by the disturbances incident to the then Revolutionary period.

In 1820, returning to France, and settling in Paris, he became a student with "Dupuytren," having, however, later had some disagreement with him, he transferred his friendship and allegiance to "Lisfranc," to whom and "Didier" he dedicated his Thesis in 1826.

After a short sojourn in the provinces his ambition and ability enabled him to gain an hospital position in Paris again, and in 1831 he was given the service of syphilitic and venereal diseases, etc., in the Hôpital du Midi. He there began the series of observations on genito-urinary diseases in general, which have immortalized him.

His first fight and victory was the differentiation between gonorrhœic infection and that of the specific sores of venereal origin. The time of absolute proof being shown, and accepted, was 1838, the series of inoculations described and practised by him affording it.

Again, later came the question of identity or duality of primary specific lesions. This was again answered by him by the same inoculation method in 1857 and shown to be undoubtedly dual in character, thus agreeing with and substantiating the opinion earlier formulated by "Bassereau" in 1852. In this matter his distinguished pupil, "Fournier," shared the honors.

Again, another question came up: Could syphilis be contracted from any other lesion than a primary syphilitic chancre or accident, and its secretions? That this was the only method of propagation was long maintained by Ricord, and supported with all the ability he possessed; but "Gibert" and others in a report (1859) settled the matter decisively that secondary lesions, etc., might do so. Ricord's surrender was full, complete and generous.

Ricord never married; his mode of life, though for many years of the simplest, was in great measure altered by his ever-increasing fame. Kind, generous and charitable of the immense sums he must have received, little remained at his death.

All charitable institutions and works in Paris have to lament a benefactor. During the war of 1870-71 he was chief of the "Presse" Hospital and service, and the first in good and brave work.

In many special, and most general ways a friend to humanity is dead.

BACTERIOLOGY.

BY B. MEADE BOLTON, M. D.

THE FATE OF PATHOGENIC MICRO-ORGANISMS IN DEAD BODIES.

Dr. E. v. Esmarch (*Zeitschrift f. Hygiene*, Bd. 7, Heft 1) finds that there is a comparatively rapid disappearance of the pathogenic micro-organism from the dead bodies of animals which have died of bacterial diseases. His experiments also show, where the dead bodies are placed in water or buried, that the water or earth surrounding them does not become infected. In the case of anthrax, substantiating the observations of Feser, he finds that the bacilli die out very rapidly from the dead bodies of the host.

That this disappearance is not due alone to the crowding out of the pathogenic bacteria, by the micro-organisms of putrefaction, is shown by preserving tissues, containing pathogenic bacteria from dead animals, aseptically. In this case the pathogenic organisms disappear; but it is true they remain present longer than where they are made to contend with the putrefactive bacteria.

E.'s conclusions, in accord with nearly all German observations, are that the proximity of cemeteries, and the drainage and ground water from the same, have no effect upon the spread of epidemic diseases.

CONCERNING THE EFFECT OF VENTILATION ON THE MICRO-ORGANISMS SUSPENDED IN THE AIR.

Dr. Richard Stern (*Zeitschrift f. Hygiene*, Bd. 7, Heft 1) made his experiments in a room in which he could have perfectly quiet air, or a more or less complete ventilation. The openings in the walls of the room were so arranged that he could admit the air from without, either at the upper part near the ceiling and convey it off near the floor on the opposite side of the room (winter ventilation), or the air could be admitted near the floor and conducted out on the opposite side of the room near the ceiling (summer ventilation). The rapidity of the ventilation was also under complete control.

The air of the room was intentionally loaded with micro-organisms. Pure cultures were mixed with the dust collected from school-rooms and factories. This was then dried and pulverized and blown about in the room. The air was then examined for the number of micro-organisms, by Petri's method, at various times.

The conclusions arrived at are :

1. That the micro-organisms rapidly sink to the floor in quiet air. The finer the dust upon which the micro-organisms rest the slower the gravitation.
2. The usual ventilation, effecting a renewal of air of from one to three times an hour, has no effect upon the removal of micro-organisms with summer ventilation, and only to a very limited extent with winter ventilation.
3. Ventilation, effecting a more rapid renewal of air (six or seven times to the hour), does effect the removal of micro-organisms, but is scarcely to be attained without a sensible draught.
4. A rapid and complete removal of the micro-organisms from the air is only attainable with a strong draught.
5. Micro-organisms are not blown off from the floor, walls, furniture, clothing, etc., even with the stronger draughts.
6. The evolution of steam in a room is not capable of rapidly and completely precipitating the micro-organisms, although it hastens this process to a not very appreciable extent.

CONCERNING THE TETANUS BACILLUS.

Dr. S. Kitasato (*Zeitschrift f. Hygiene*, Bd. 7, Heft 2) has recently succeeded in cultivating pure cultures of the bacillus of tetanus. His method consists in inoculating blood-serum or nutrient agar with the pus from a wound of an animal dead of tetanus, and allowing the mixture of bacteria thus obtained to grow forty-eight hours. These impure cultures he then heated up to 80° C. for three-quarters of an hour to one hour. He then inoculated agar or gelatine from this, and poured the medium so inoculated into sterilized flasks of peculiar construction. These flasks are much flattened on two sides, and have a narrow neck, and also a narrow tube at the bottom. Hydrogen gas was bubbled through these flasks, after the cultures were poured in, and then sealed up similarly to Liborius' method.

K.'s conclusions are :

- “ 1. Tetanus is an infectious disease, caused by a specific bacillus.
- “ 2. The cause of tetanus in the human being and in inoculated animals is one and the same kind of bacillus, which is identical with the anærobic bacillus first described by Nicolaier, and afterward corroborated by Rosenbach and others.
- “ 3. This bacillus occurs in the pus from the wounds of persons affected with tetanus and of animals experimented upon. It often forms spores in the pus, but appears often in the pus as a rod without spores.

"4. The bacilli can be cultivated pure from pus from human beings suffering from tetanus, and also from animals affected in the same way. With these pure cultures, tetanus can be conveyed to other animals.

"5. Former observations, which differ among themselves, especially in regard to the appearance of the bacteria, are readily explained by the tetanus having been examined at different stages. The more quickly the patients or animals die the more rarely do the bacilli form spores. But the bacilli never fail to be present. It is always possible to cultivate spore-bearing bacilli from the pus, even though it contain no spores."

It is remarkable that K. was unable ever to find the bacillus in animals inoculated with pure cultures, although the animals died of typical tetanus. The autopsy showed in no cases any change in any of the organs or tissues. There was never any suppuration around the seat of inoculation, only a hyperæmia.

PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.

A NEW AND USEFUL ALKALOID OF OPIUM.

The Bulletin de l'Académie de Médecine, Vol. XIX., No. 19, contains an article by Laborde, entitled *Étude expérimentale d'un nouveau produit tiré de l'opium, la méco-narceine* ("Experimental Study of Meco-Narcein, a New Product extracted from Opium"). The author finds that the physiological properties of this alkaloid are very similar to those of narceine. It has very strong somniferous properties, and acts like morphia upon mucous membranes.

The author recommends it in all cases of insomnia, whether "protopathic or symptomatic." He says it is indicated in bronchial or broncho-pulmonary troubles, with cough and excessive secretion of mucus. He has tried it in certain forms of neuralgia, and finds that it gives relief, either as a local application or administered hypodermically. He thinks it will find its chief use in cases where the patient is a victim of the morphia habit, or where there are grounds for fear that this habit will develop.—*From Revue des Sciences médicales, 1st quarter, 1889.*

NUTRITION—BONE.—ARTIFICIAL OSTEOMALACIA IN A PREGNANT BITCH.

Stilling and von Mehring (Centralbl. f. d. med. Wissensch., 1889, No. 45, p. 803) write: A medium-sized, strong, healthy bitch was chosen for the experiment. After being covered, she was fed on six hundred grammes of finely chopped horse-meat, from which the salts

were to a large extent extracted by being boiled for two hours in three litres of distilled water. In addition to this, she was given forty grammes of tried fat; and, as drink, was given only distilled water. The bitch gave birth to six healthy puppies, one of which was killed immediately. The osseous parts of the body were found to be strong and well built, and there were no abnormalities. The other puppies did not thrive; they remained weak, and could scarcely walk at the end of three or four weeks. Four died from excessive feebleness, and the sixth was killed at the end of eight weeks. None of them showed any abnormalities of bones or joints. The mother had become very lean, but was tolerably lively and had a fair appetite. No changes in the shape of the bones were observed. She was killed one hundred and twenty six days after the beginning of the experiment.

No pathological changes were observed in the internal organs, and the bones of the skull and of the extremities appeared to be normal. On the other hand, the vertebræ and pelvis were found to be greatly affected. The saw cut through them with the greatest ease. The red marrow was forced out without great difficulty, upon pressure, and thin sections could be made with a scalpel. Microscopical examination showed beyond doubt that the case was one of genuine osteomalacia.

The authors call attention to the fact that the lesions were localized in the spinal column and pelvis, just as is the case in the earlier stages of puerperal osteomalacia in women.

We have on record experiments by Roloff, Voit, and others, showing that pathological affections resembling rickets may be produced in young and rapidly growing animals by withholding sufficient lime from their food. Experiments on adult animals have not been so successful, and genuine osteomalacia has not been produced.

The main point of interest in these experiments is the demonstration of the fact that the laws of life demand that the system of the mother shall part with its store of necessary lime, to furnish the requisite amount of this substance to the young. An analysis of the milk of animals under such conditions would be very interesting, to show the rate of change, in the yield of calcium salts, as the drain on the mother continued.

BROOKLYN VITAL STATISTICS FOR NOVEMBER, 1889.

Population, estimated Oct. 1, 1889, 843,602	The number of births reported was	988
In the month of Nov. there were 1273 deaths, the rate of mortality being 18.36 per 1000 of population.	The number of marriages reported was	534
	The number of still-births reported was	125

Causes:

1. Zymotic.....	225	Malarial Diseases.....	13
2. Constitutional.....	247	Diarrhoeal Diseases (all ages).....	9
3. Local.....	656	“ “ (under 5 years).....	5
4. Developmental.....	112	Phthisis.....	174
5. Violence.....	33	Bronchitis.....	65
Measles.....	—	Pneumonia.....	164
Croup.....	33	All Respiratory.....	254
Diphtheria.....	101	Bright's Diseases.....	35
Scarlet Fever.....	13	Puerperal Diseases.....	6
Typhoid Fever.....	25	Old Age.....	37
Whooping Cough.....	6	Suicide.....	

Diphtheria.....	282	Measles.....	27
Scarlet Fever.....	101	Typhoid Fever.....	90

Male.....	681	U. S. Native.....	834
Female.....	592	Foreign.....	439
White.....	1247	Married.....	399
Colored.....	26	Single.....	674
Widows, Widowers, and not stated.....		200	

Males	65	} Total	125
Females.....	60		
Deaths in public institutions.....	102	Homicides.....	
Deaths in tenement houses.....	375	Suicides.....	5
Inquest cases			96

Deaths under 1 year.....	236	Total deaths, 5 to 20.....	140
“ “ 5 years.....	178	“ “ 20 to 40.....	240
Total deaths under 5.....	414	“ “ 40 to 60.....	234
		“ “ 60 and upwards.....	245

Brooklyn.....	18.36	Vienna.....	19.04
New York.....	19.64	Paris... ..	20.62
Philadelphia.....	18.30	London.....	16.20
Dublin.....	25.40	Glasgow.....	23.10

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ORIGINAL ARTICLES.

ETHER, CHLOROFORM, OR NITROUS OXIDE?

BY GEORGE R. FOWLER, M.D.,

Surgeon to M. E. Hospital and to St. Mary's Hospital, Brooklyn.

Apropos of the recent discussion before the Brooklyn Surgical Society, it may be said that the subject of anæsthetics ever since their discovery and first introduction, now several decades ago, has been a most attractive and absorbing theme to thoughtful surgeons. From time to time new experiences and new conclusions are announced, and a change of front as regards the safety of one of these agents, and the danger of others, is announced, to say nothing of the occasional discovery and alleged great advantages of new agents of this class. Of the latter it may be said, in passing, that their only claim entitled to respect and belief on the part of the profession thus far, is based upon the fact that they are novel. The action and adaptation to particular cases of anæsthetics other than those which head this article are comparatively obscure, and except in the hands of their discoverers, have little place in the armamentarium of surgeons.

It is curious to note the oscillations which the first of these, ether, has undergone in the opinion of operators. In this country it has been from the first the favorite agent for producing insensibility during the performance of what would be otherwise excessively painful, and, in

some instances, impossible operations. But more recently there has been a movement among American surgeons to replace it, in most cases, by chloroform, following the English and German line of thought and practice in this particular. On the other hand, some of our European confrères, attracted by the quite noticeable absence of reported accidents occurring during ether anæsthesia, and attributed to the latter, have turned their attention to the uses and advantages of this anæsthetic agent.

In the Geneva clinic, Julliard seems to have led the way among European surgeons in the abandonment of chloroform, and the substitution thereof of ether. His results were of so highly satisfactory a character as to arrest the attention of Dumont.¹ This surgeon has now used sulphuric ether for over two years, to the exclusion of chloroform, and his experiences are entirely corroborative of those of Julliard. He expresses himself as being entirely in favor of this agent, and that, too, in very decided terms, claiming for it all that American surgeons have claimed for it in regard to its superiority over chloroform. With increasing use and familiarity with this means of producing surgical narcosis, Julliard and Dumont became quite as expert in its use as their colleagues upon this side of the Atlantic, frequently succeeding in producing complete surgical narcosis in from one to two minutes. The freedom from dangerous and threatening symptoms occurring in the course of the administration, in the hands of Dumont, is also a striking feature of this surgeon's experience. For instance, he reports that in 182 administrations in but a single instance was there any necessity for anxiety regarding the patient's condition. In this patient, an old subject suffering from chronic bronchitis, collapse occurred. The conclusions of Dumont in regard to the propriety of administering sulphuric ether to persons suffering from pulmonary affections are entirely in accord with those to which surgeons of extensive experience in the use of this agent have arrived, viz., that such must always be a source of more or less anxiety on the part of the administrator. In addition it may be noted, that it is also a rather universally acknowledged fact that the more acute the lesion of the air passages or pulmonary structure itself, the greater the danger.

There can be no gainsaying the fact that ether produces far greater irritation of the air passages than chloroform; and further, that the resistance to its administration, owing to the involuntary repugnance almost invariably shown to its vapor, on the part of patients, is somewhat difficult to overcome, and often stands in the way of an easy and comfortable transition from a state of consciousness to that of insensi-

¹ *Korrespondenzblatt f. Schweizer Aertzte*, 1889. No. 23.

bility as compared with its rival. The assertion, however, I know, will be echoed by thousands who have used ether for many years, that these disadvantages are far more than counterbalanced by the decidedly greater safety of this agent.

It is a noticeable fact, yet one not easily accounted for, unless one may imagine a national determination to disparage anything which Germans have a decided leaning toward, that in those portions of Switzerland where the French element prevails, there is a growing interest in ether, and this agent has been steadily growing in favor as an anæsthetic in these districts.

Be that as it may, our German colleagues seem to have taken alarm at the increasingly large mortality attending chloroform administrations, and with their proverbially philosophical and inquiring turn of mind, have set out to settle the truth about this question, in their usual exact manner, by instituting a series of experiment upon the lower animals. It is now nearly two years ago since Ungar, discoursing upon this theme, claimed that animals, chloroformed for several hours at a time, and upon successive days, showed upon dissection indubitable evidences of fatty degeneration of, first, the heart and liver; second, of the kidneys and striped muscular structures; and third, of the gastric and mucous membranes generally. These were attributed by Ungar to the direct poisonous effects of chloroform. More recently Strassman² has published some very interesting experiments bearing upon the question of the fatal after-effects of chloroform, in which he essentially corroborates the observations of Ungar, and sums up the results of his researches as follows :

1. After prolonged chloroformization, in dogs, there can be demonstrated a fatty metamorphosis of the liver; the heart may partake of the same changes as a secondary result. Other organs are seldom affected. These changes consist of true fatty degeneration and not of fatty infiltration.

2. Subsequent to the usual chloroform narcosis, and when recovery therefrom has apparently taken place, a fatal result is occasionally observed to occur.

3. Inasmuch as in the fatal cases the heart changes were found to be particularly well marked, these latter may reasonably be assumed to have been the cause of death.

4. In non-fatal cases the evidences of degenerative changes are not found after several weeks.

5. These changes are particularly prone to occur in those in whom debilitating influences, such as hunger, loss of blood, etc., can reason-

² Virchow's Archiv., Bd. 115.

ably account for the susceptibility to this undue action of the anæsthetic. In young and vigorous animals a greater power of resistance counteracts the tendency to these changes.

These researches and published observations of both Ungar and Strassman, agreeing as they do in all essential particulars, point to but one conclusion. The charges brought against chloroform by its earlier opponents are more than sustained; for whereas it was supposed that the accidents during its administration were due to influences of a more or less functional character, it now transpires that, in addition to what has been looked upon either as a paralysis of the heart muscle through interrupted nerve force, or over-stimulation of the inhibitory apparatus, or both, we are to expect, in addition, true organic changes in the structure of the heart itself, as a result of the use of chloroform.

The deductions to be drawn from this presentation of facts would seem to be obvious, and yet, notwithstanding the apparently logical inferences which one would at the first glance draw, after careful study of the question, there are still some practical difficulties in the way of laying down any hard and fast rule, regarding the choice as between chloroform and ether as an anæsthetic agent. It would seem, however, as if the following conclusions, as far as they go, might be justified.

1. As an anæsthetic for surgical purposes, ether will be found to be **less dangerous and more generally applicable.**

2. If chloroform is to be used at all, it should be only for short operations or dressings otherwise painful. If necessity exists in any given case for the frequent exhibition of an anæsthetic, chloroform should give place to ether. Young and vigorous persons, and even those in advanced years who have not been subjected to debilitating influences, or are not the subjects of degenerative disease, may take chloroform with comparative safety; yet there is no reason why this same class may not take the safer anæsthetic, ether, as well.

3. In aged persons suffering from pulmonary affections, the administration may be commenced with chloroform; but, if it is found that the operation is to be a long one, ether should be substituted.

4. If degenerative disease of the kidneys and heart exist, and no pulmonary complication, ether should be used. If all of these conditions co-exist, judgment must be exercised as to which has a predominating influence, and the choice made accordingly. In any event, the anæsthetic chosen under these circumstances should be used with great care.

I desire to refer to the pernicious habit of producing a mixed narcosis (chloroform and ether given simultaneously) simply to condemn it most unqualifiedly. Whatever good or evil resides in either agent should be kept apart, and the habit of uniting the one and at the same

time attempting to prevent the undue influence of the other, must always remain a matter of uncertainty and doubt; the practice is, beyond doubt, unscientific, and should always be discouraged to the last degree.

The habit of administering atropia hypodermically prior to the administration of the anæsthetic has received the sanction of authority, and I know of no valid objection to urge against it. In ether narcosis it certainly lessens the tendency to profuse secretion from the mucous membrane of the air passages, and Birtelow's assertion that it acts as a stimulant to the respiratory centres seems to be borne out by experience. There are some advantages in combining morphia with this agent, particularly where it is deemed best to use chloroform as the anæsthetic agent. Without doubt it seems to lessen the amount of chloroform necessary to produce and maintain anæsthesia, and correspondingly lessens the danger to be apprehended from the use of the latter.

There have been some attempts made during the past four years to popularize in the profession the use of nitrous oxide as an anæsthetic for general surgical use. The name of Paul Bert, of France is prominently associated with these attempts, but his published observations tended to discourage, rather than encourage, surgeons in the use of this agent. The reason for this resides in the fact that Bert sought to prove that for the purposes of its proper and safe administration for a protracted time, it is necessary that a specially prepared chamber be used, and that a fixed and certain atmospheric pressure be maintained during the administration. With ether and chloroform always at command, no surgeon would submit to such elaborate preparations, involving as they do an outlay of money, time and energy not warranted by the advantages to be obtained by the use of the gas. I have always entertained some doubt as to the necessity, in the use of this agent, for such extraordinary precautions, and I therefore hailed with delight the assertion of Dr. Geo. W. Brush, of Brooklyn, who has had many years' experience in the use of nitrous oxide, administered for dental operations, that it could in most cases be utilized for prolonged operations, with the patient in the recumbent position. The wide-spread belief in the innocuousness of the gas, the utter absence of depression arising from its use, the absence of any irritating qualities, as well as taste and smell, together with the ease of its administration and rapidity with which patients recover from its anæsthetic effects have always been attractive qualities to me; but I confess that the appearances of ghastly cyanosis and impending suffocation which the patient presents while under its influence, and which to my mind could only be explained by an accumulation of carbonic dioxide in the blood, deterred me from

giving the agent that fair and unprejudiced trial which it would seem to deserve.

Yielding, however, to the assurances of Dr. Brush that, whatever the cyanosis might be due to, it certainly was not a sign of impending dissolution, I consented to allow of its trial in a very important operation, the pioneer of its kind, that of modified laryngectomy after Cohen's proposition. Dr. T. R. French, our esteemed laryngologist, had seen the case, one of typical epithelioma of the left ventricular band and vocal cord, with me, and it was upon his suggestion that I entertained Dr. Brush's proposition, with whose experience in nitrous oxide administration I was not at that time familiar, to allow him to demonstrate the feasibility, (even under the adverse circumstances of being compelled to administer the gas through a tracheotomy tube, and keeping the nostrils plugged and mouth covered), of keeping the patient in a condition of safe anæsthesia for a length of time sufficient for the purposes of this operation. The result was a perfect revelation to me. The operation, together with the elaborate packing of the wound, securing of the stump of the trachea and fixation of a feeding tube in the opened œsophagus, occupied just one hour and forty minutes; during the whole of this time anæsthesia was maintained, and at its close the patient, whose pulse had never wavered, but on the contrary, preserved its force and rate the same as before she came upon the table, became fully conscious within two minutes after the administration of the gas ceased. Had she not been prevented from doing so, she would have insisted upon her ability to walk from the operating-room to her own bed. No elaborate preparation was needed, and the only departure from the apparatus ordinarily employed by the dentists consisted of a screw coupling by means of which the tubing which conveyed the gas could be attached to the tracheotomy tube.

But the cyanosis, the ghastly appearance, even worse than that presented when the grim monster himself has taken possession of the patient, was present all the time: and I am not ashamed to say that, in the absence of any rational explanation of the condition, it was all that I could do to preserve my equanimity during this trying period. In spite of Dr. Brush's assurances, I felt far from comfortable, and whatever credit my colleagues who witnessed that operation may be inclined to give me for its successful completion, they will never know how much I was handicapped by that ashen gray, death-like upturned face within a few inches of my own during the whole time.

But why this peculiar condition, than which nothing can be more horrible? If it was not the result of the accumulation of carbonic dioxide in the blood, what was it? It was small comfort to know that

one's patient was not being suffocated with one agent, while the suggestion was constantly before one's eyes that either that or something else was threatening to suspend his animation or destroy his life. Dr. Brush's assertion that they always looked badly under its influence is somewhat reassuring, but his suggestion that the appearances were due to some chemical changes in the blood itself, only leads one to dread the possibility of there being some ultimate, if not immediate, danger resulting from its administration. Chemical combinations which could produce such changes in the circulating medium, even temporarily, are not to be disregarded.

With this case yet fresh in my mind, I sought some explanation for this somewhat anomalous state of apparently threatened death and yet assured safety. In the course of my inquiries I found some observations by Ulbrich referred to. This observer, I found, had used the spectroscope for the purpose of determining the relation which nitrous oxide bore to the blood during its administration. As a result of his researches, Ulbrich declared that there was a chemical union between nitrous oxide and the hæmoglobin. These observations, unless it could be shown that this union was not of a character to destroy or even abrogate temporarily the function of the hæmoglobin, would still leave the question an unsettled one, provided they were confirmed.

Spectroscopic analyses of the blood were not new, for in 1871, Preyer, of Jena, made similar researches. Buxton² directed his spectroscopic researches particularly toward the physiological effects of nitrous oxide. Later, MacMunn³ made spectroscopic experiments upon the blood. But the most carefully conducted experiments upon the relation which nitrous oxide bore to the blood seem to have been those of Rothmann,⁴ and these may be looked upon as being the most reliable studies upon the subject up to the present time.⁵

In the first place Rothmann, with true German instinct, set out to criticize the methods of the only one of these observers who drew any definite conclusions from his studies, namely, Ulbrich. He declares the experiments of the latter to be utterly unreliable, for the reason that he made use of concentrated solutions of the blood elements. In following Ulbrich's methods, it was found that as a result of this concentration the spectroscopic absorption bands are shown broader, darker, or quite unrecognizable. Rothmann's first step was to estab-

² Korresponder zblatt f. Zahnärzte, Berlin, 1887.

³ Internat. klin. Rundschau, Vienna, 1884, No. 4.

⁴ Vierteljahrsschrift f. Zahnheilkunde, 1888, Hft. 3.

⁵ August, 1889.

lish beyond a doubt the exact spectrum of the hæmoglobin when in the full performance of its function, *i. e.*, combined with oxygen. He then established the fact that the spectrum of blood, loaded or saturated with nitrous oxide, possessed precisely the same spectrum as oxyhæmoglobinic blood. This is a point of incalculable importance, for inasmuch as the hæmoglobin is enabled to continue its function, in spite of the presence of the gas in the circulating medium, no harm can come from the continued administration of the latter during long operations. Upon suspending the inhalation of the gas, the processes of oxydation are at once resumed as the atmospheric air is breathed.

The favorable experiences of the dental branch of the profession, extending over many years, in the administration of nitrous oxide for the performance of short operations, will always warrant its use for such purposes. The results of Rothmann's operations, which, if they do not explain the condition of apparent cyanosis, at least demonstrate that the essential blood elements, far from being in the condition which characterizes a suspension of their function (carbo-hæmoglobinic blood), are in precisely the opposite state (oxy-hæmoglobinic blood), and that, hence, the administration of the gas may be kept up for a length of time sufficient for almost any operation with perfect safety.

I should not fail, in this connection, to call attention to what may be a source of inconvenience in the use of this agent in general surgical operations. I refer to the altered color of the blood as it flows from the cut vessels, and the difficulty in some localities of distinguishing by its color arterial flow from simple venous or capillary oozing. An arterial twig may, for several reasons, not always give off a *per saltum* stream, and yet furnish sufficient blood to embarrass the operation and require the clamp, and perhaps a ligature as well. While slight pressure will suffice for simple capillary oozing, it is a waste of time to resort to this in the case of a flow from an arterial branch. If these two are combined (arterial flow and capillary oozing) and the location of the artery is not marked by its usual interrupted stream, one can readily see how the operation may be delayed pending an effort to identify the latter.

Another point occurs to me. In the cases in which the gas was administered for me, not all gave me such a favorable experience as the one above related. In at least one, a case in which I designed to remove a portion of the lower jaw for necrosis, it was found impossible to bring the patient under its influence. Ether was then used, but, whether from the previous efforts with the nitrous oxide or from some peculiar idiosyncrasy on the part of the patient, it was found impossible to control her powerful efforts at resistance without exerting undue force. I was finally compelled to order the substitution of chloroform.

Under this agent the operation was brought to a satisfactory conclusion. This inability to anæsthetize the patient is a rare one, according to dental operators.

Finally, a peculiar condition of muscular rigidity, which is not abolished by pushing the anæsthetic, as in the case of other agents, but which rather increases as the narcosis deepens until it finally extends to the muscles of respiration, is sometimes noticed. When this latter circumstance is observed, it is an imperative demand for a suspension of the anæsthetic. This very seldom troubles our dental friends, for it is just at this stage that, by a dexterous twist, they accomplish the purpose for which the anæsthetic was administered. But in an operation which is to be a prolonged one, even if the rigidity does not extend to the respiratory muscles, it may become a source of serious embarrassment to the operator, particularly under circumstances where a relaxed condition is absolutely necessary, such as operations about the anus, rectum, perinæum, etc. This complication has likewise occurred to me.

Neither clinical experience nor experimental observation has yet demonstrated to the entire satisfaction of surgeons the exact conditions under which each of these anæsthetics may be most advantageously employed. My advice is to attempt no operation requiring anæsthesia with but one of these agents only at hand; and if it be decided beforehand to use nitrous oxide, it would be but a wise precaution to have both of the others within reach.



FATTY HEART, WITH DILATATION; PULMONARY CONGESTION, PERICARDITIS, PERITONITIS.

BY W. H. THAYER, M.D.

Read before the Brooklyn Pathological Society, November 14, 1889.

The subject of this paper was a man in his sixty-fourth year, a widower three years, with three children between twenty and thirty years of age. For thirty years he had been a shipping merchant in New York, residing in Brooklyn. Before that time he was a seaman and captain of an East India clipper ship. He was compactly built, of good figure, medium height, of regular habits, easy life, and apparently good health. He was taken ill on the 24th of June, and died July 4th, ten days later. The next day Dr. G. R. Westbrook made an autopsy for me, at which Dr. Mosher and I were present, which is

here reported before giving the record of the illness, because some of the lesions were not accounted for by any symptoms.

Autopsy.—At 11 A. M., July 5th, twenty-two hours after death: Rigor mortis well marked. Two inches of fat in abdominal wall. The peritoneal cavity contains many ounces of serum, slightly turbid, and with some flocculi of lymph floating in it. The peritoneum of the left side of the abdomen covering the ileum, and in the pelvis covering the bladder, has a slight exudate of recent lymph upon its surface, and in the pelvis there are recent adhesions between the bladder and the opposite peritoneum. The remainder of the peritoneal cavity is normal. The ileum is considerably contracted, owing to old thickening of its peritoneum, looking like cicatrices. But internally it is normal, there being no ulcers nor other changes of the mucous membrane. The stomach contains some thick stringy mucus. Its mucous membrane is normal; strips more than an inch long can be raised.

The peritoneal surface of the liver is rough like a file, but has no recent exudation. Its substance is somewhat soft, but otherwise normal. The gall bladder contains about two ounces of bile.

The kidneys are of normal size and consistency, and give no evidence of disease. The bladder is normal, and contains about six ounces of clear urine.

The right lung is almost universally and closely adherent by old adhesions. Its substance is full of serum; crepitates everywhere: no hepatization. The pleural space, not adherent, contains several ounces of serum. The left lung is normal, without adhesions, and its pleural cavity has several ounces of clear serum. There is no lymph in either cavity, nor any evidence of pleuritis.

The heart is large, nearly empty and very soft, tearing with the slightest effort. The pericardium is rough with a reddish exudate, especially on the posterior surface of the heart. There is no serum in the pericardium, and there are no adhesions. The heart is not hypertrophied; the endocardium and all the valves are normal, and the ascending aorta has no atheroma or other abnormality. The blood is everywhere remarkably dark.

Dr. Shaw, who was unable to attend the autopsy, examined microscopically a portion of the wall of the left ventricle, and found much interstitial fat, but no degeneration of the muscular fibres, nor any other morbid condition.

I learn from the son of my patient that the father has had no serious illness within the recollection of the son, except a violent diarrhœa lasting a day or two about three years ago. He is not known to have had any fainting fits. A slight catarrh with occasional hoarseness is

all the trouble that he reported himself liable to when I was summoned to him. He had never previously been under my care, but I have seen him familiarly as a neighbor for ten years, and always had the impression that he was a vigorous, healthy man.

On the night of June 24th, 1889, between 12 and 1 o'clock, I was called to him, and found him complaining of pain under the upper part of the sternum. There was no fever nor dyspnœa. He had been at his business as usual the day before, and apparently well when he went to bed. Suspecting indigestion, a mustard emetic was administered, which made him vomit a quantity of partly digested food—eight hours after his latest meal. When his stomach had been evidently emptied, the pain continuing, I gave him ether by inhalation, with temporary relief. But the pain returning, I made a hypodermic injection of Magendie's solution of morphia, m viij , with sulphate of atropia, gr. $\frac{1}{100}$; after which the pain was removed and he slept till morning.

At 9 A. M., June 25th, his temperature was 98° ; he had no appetite; he was ordered a seidlitz powder at noon. Got ten grains of of sulphonal in the afternoon and again in the evening.

June 26th.—The pain has left its original seat, and appears in the region below left nipple over a surface covered by the hand; is not acute, nor is there any tenderness. Pulse 120, very feeble. Tongue covered with moist, whitish coat. No dejection yet. Got seidlitz powder again this morning.

R Pil. Rhei, No. ij, now.

7 P. M.—Is very weak, with threadly pulse. No dejection. Has had no desire for food, and taken none; but occasionally two teaspoonfuls of whiskey.

Gave gr. $\frac{1}{20}$ of sulphate of strychnia, and directed milk punch at 9 P. M.

Was called to him at midnight. Find he has had repeated convulsions for the last hour. Wakes from sleep suddenly with blowing respiration, cheeks puffed out, eyes turning upward, then pupils dilating, flexors of legs and arms beginning to contract and go into tonic spasm. Then suddenly sits up, as by a spasm of the pelvic and abdominal muscles, and immediately comes into full consciousness and intelligence, the entire paroxysm not occupying more than one minute. These paroxysms are repeated every five or ten minutes. In the intervals he is quiet, makes no complaint, and does not know that anything has occurred. Once I had my fingers on his radial artery, and found the pulsation ceased entirely for several seconds, just as the paroxysm began.

At 12.40 gave hypodermic of same strength as the first night, after which there were no more convulsions, and he slept.

On the 27th of June he got three compound cathartic pills, but had no dejection during the day. At 5 p. m. the convulsions recurred, and in the next two hours he had fifteen. Then got an enema of glycerin and water, followed by a slight dejection; after which there were no more spasms.

During this day his respiration had been labored, but what was the exact condition of his lungs I did not know, having myself a temporary deafness which prevented auscultation. He had no cough nor expectoration, but there was forced expiration, a rapid and feeble pulse, and a temperature of 99°.

At 8 p. m., Dr. John C. Shaw him in consultation, and found on auscultation a rather coarse crepitus over whole of both lungs posteriorly, and to a less extent in front. He found no cardiac signs. He suspected the convulsions were uræmic. The urine had not then been examined; there was, however, no œdema anywhere, no vomiting, nausea or headache—only entire want of appetite.

We increased his stimulants, giving whiskey or champagne, alternating with carbonate of ammonia every two hours.

June 28th. Had two dejections in the night. No convulsions. Slept uneasily. Passed \bar{z} xij of acid urine during the night, which showed the merest trace of albumen, but no casts, nor any other peculiarity.

Seidlitz powder now.

R Tinct. Strophanthi, gtt. x, every three hours.

June 29th. Slept fairly well. Two dejections. Temperature normal all the time. Pulse small and rapid. Expiration still forced. Moderate pain still in cardiac region. Urine has hardly any perceptible albumen; no casts.

June 30th.—One dejection yesterday. Pulse 102. Temperature 98½. Setting him up to auscultate him, his pulse fell to 90, and became irregular. Has some desire for food, but only liquid. Takes about three pints of milk, a cup of cocoa, one of beef tea, and the juice of three or four oranges, daily.

Evening.—Pulse 102. Temperature 98°.

July 1st.—Yesterday got strophanthus only every six hours; since last evening every three hours. Now, pulse somewhat increased in volume, regular, 102. Temperature normal. No forced expiration. Pain in cardiac region slight and not constant. Tongue nearly clean. No dejection. Urine freer— \bar{z} xvj during night; no albumen.

Seidlitz powder.

July 2d.—Slept more. Feels as well. One dejection yesterday afternoon. Eight ounces of normal urine in night. Pulse 101. Temperature $99\frac{2}{5}$.

July 3d. Evening.—Has had a comfortable day. Says he feels a little better every day. Has not been able to lie on left side, but lies on back or right side. Breathing only occasionally labored. Has little pain. Does not sit up at all. Pulse still feeble, but has more volume than several days ago, and is regular. Tongue about clean. Takes his liquid food with some relish. Is in good spirits. Sleeps well. At my request Dr. G. R. Westbrook examined his chest carefully this evening. Found coarse crepitus at the base of chest in the rear, most marked on the right side, where the respiration was somewhat bronchial; elsewhere nothing abnormal, front or back. Heart sounds faint; no souffle; no impulse. He sat up two or three minutes for examination without any lowering of the pulse, which was 100.

July 4th.—Passed $\frac{3}{4}$ xvj of urine in the night. Sleep somewhat disturbed by street noises, but feels well this morning. Temperature in the last two nights has been $99\frac{2}{5}$. Pulse as it has been.

Substitute tinct. ferri chloridi and acidum phosph. dilutum for the carbonate of ammonia.

2 P. M.—Found dead, his nurse having sat in the next room for an hour, supposing him to be asleep. Face and hands cold where exposed. Blood has settled on left side of face, to which his head is inclined. Pupils very little dilated. No rigor of arms, but jaws stiff, and a little froth between the lips.

To recapitulate: An elderly man with a weak heart had an indigestion, followed by complete loss of appetite and sluggish bowels for three days. Forty-eight hours from attack, convulsions, checked by hypodermic of morphia and atropia. On the third day dyspnœa began, which proved to be due to pulmonary congestion, resulting from cardiac weakness. On that day recurrence of the spasms, finally arrested by action of the bowels. The only symptom of any consequence after this was the dyspnœa, which began to lessen on the sixth day; and his improvement in every way was continued without interruption to the time of his sudden death on the eleventh day. For the last three days of his life his temperature was $99\frac{2}{5}$, but his appetite was good, his digestion normal, bowels free; and his urine, which had at one time a trace of albumen, was normal in quantity and quality; and not a symptom indicating peritoneal inflammation or any new morbid condition, except an elevation of one degree in temperature.

The symptoms of acute peritonitis are a dorsal decubitus, with knees drawn up; pain and extreme tenderness over the abdomen, which is distended; a general aspect of collapse; constipation and

vomiting; scanty urine; cold sweats; pulse rapid and small; an elevated temperature; thirst; respiration shallow and rapid; voice weak—all wanting in this case. Indeed, he was feeling better every day.

It is difficult to state with any degree of positiveness the mutual relations of the various symptoms in his case. The cardiac dilatation and adipose deposits had not manifested themselves previously to this fatal illness by any symptoms. But they were probably the original cause of the pulmonary congestion and the spasms. The spasms correspond to the pseudo-apoplectic attacks which Stokes describes in some cases of fatty degeneration of the heart. But the spasms and the pulmonary congestion might never have occurred had active purgation been procured on the first day. During the first two days, the patient presented no marked symptoms; he seemed to be simply weak and without appetite, as might be natural after an attack of gastric indigestion; and rest, with a saline cathartic, appeared to be all the treatment required. The saline was repeated on the second day, and rhubarb pills added; and on the third day, after the first convulsions and the commencement of dyspnoea, more powerful cathartics were administered, and when free catharsis was established, general improvement soon began. Active stimulation with whiskey, ammonia, and strophanthus were continued with good effect during the life of the patient.

Was death due to a convulsion, produced possibly by his inclining to his left side during sleep, which had always during this illness brought on dyspnoea? What part did the peritonitis play? It gave no sign whatever during life. The autopsy revealed the existence of an old affection of the peritoneum, in the cicatrices in the peritoneal surface of the ileum, and the roughness of the surface of the liver, without any adhesions; but there was no history of anything that would account for these lesions.

MEANS FOR THE MORE PERFECT STERILIZATION OF SURGICAL INSTRUMENTS AND DRESSINGS.

BY H. BEECKMAN DELATOUR, M.D.,
Assistant Surgeon Methodist Episcopal Hospital.

Read before the Brooklyn Surgical Society, Oct. 17, 1889.

So much has been written upon the preparation of surgical dressings since the advent of antiseptic surgery that there seems hardly room for more to be said. Yet, with all this literature, opinion is still divided as regards the best means of sterilization, and, as a consequence, the subject appears to be very complicated.

With this state existing, is it not well to look about us and see what means are being employed at our general hospitals? Having this idea in view, I visited some of our hospitals, and to-night will present you with a summary of what was found.

Let us, while reviewing the sterilization of dressings and instruments, also look at the means used to render aseptic the parts immediately about the field of operation and also the cleansing of the surgeon's hands.

That the seat of operation should be sterile does not admit of question. Too little attention has, as a rule, been given to this subject, for of how much avail can completely aseptic instruments and dressings be if the parts immediately about the wound are not first rendered aseptic? The methods of cleansing the parts, now practised, vary with different surgeons. With some the preparations are very extensive, notably in Germany. Von Bergmann (*Centralblatt f. Chir.*), for instance, orders the patient a general warm bath, in which he is thoroughly scrubbed with soap and brush, and from this bath is immediately taken to the operating-table. Here the parts are rinsed with alcohol and afterward rubbed with ether and washed again with 1.2000 bichloride solution. At the Presbyterian Hospital, New York, the routine is to give the patient, the night before operation, a general warm full bath, and on the morning of the operation the parts are shaved and scrubbed and another warm bath given. Then, for the few hours preceding the operation, the parts are covered with cloths wet with a one-per-cent. mixture of creolin. Immediately before the incision is made the parts are scrubbed with *sapo viridis*, irrigated with bichloride, 1.2000, then a solution of iodoform in ether is scrubbed over the surface.

At the majority of the metropolitan hospitals the preparations are not so elaborate; the general rule being to have the parts about the wound shaved, well scrubbed, and covered by an antiseptic solution for a few hours before operation.

As to the means used by the surgeon to render aseptic the hands: The majority thoroughly scrub the hands with soap and warm water and then *dip* them in a solution of either bichloride or biniodide of mercury just previous to beginning the operation. Others use green soap in place of the ordinary soap, *dip* the hands first in alcohol and then in some antiseptic solution, and from time to time during the operation rinse off the blood in the solution.

The general plan of sterilizing the instruments is to have them thoroughly washed with soap and hot water and well dried after each operation. Before being again used they are placed in an antiseptic solution, either three-per-cent. carbolic or 1.4000 hydronaphthol. In some of the hospitals for the more important operations, as laparoto-

mies, the instruments are either boiled or submitted to dry or moist heat.

The usual method of treating the dressings is to subject them to the action of some chemical germicide. The chemical most used for this purpose is the mercuric chloride in solution of the strength of 1.1000 or 1.2000.

Besides chemicals, the well-known sterilizing properties of *heat* are taken advantage of for rendering sterile both instruments and dressings. The common gas oven, in which dry heat is obtained, the use of superheated steam, and ordinary boiling are examples of this method. It is the object of this paper to more particularly direct attention to this means of sterilization and the facility with which it can be carried out.

Heat has always been considered, by the bacteriologists, as the most efficient of sterilizers. Many varieties of bacteria, in fluids, are killed by a temperature of 100° C., if it be continued long enough. When dry they resist somewhat higher temperatures; the spores being more resistant than the bacteria. Even these may be destroyed by repeating the application of the heat after they have had time to develop. From this it follows that all germs existing in dressings or on instruments can be destroyed without the use of chemicals, provided the exposure to heat is made long enough and the temperature sufficiently high.

Burrell and Tucker (Boston Med. and Surgical Journal, Oct. 3, 1889) have made some very interesting experiments testing the efficiency of heat and chemicals to sterilize instruments and dressings. They took a number of instruments from a glass case in the hospital, and found that they were always covered with bacteria. They then exposed some of these to the action of 1.40 solution of carbolic, and on examination bacteria were found on all but two. The same was true of 1.500 alcoholic solution of hydronaphthol. Next they boiled the instruments for two hours, all sterile; some were simply steamed, and were found to be not entirely sterile. Another lot of instruments were baked, part at a temperature of 130° C. and the remainder at 160° C. These instruments were all sterile and had not been harmed by the temperature.

From these experiments we learn that instruments can be more certainly sterilized by heat than by any of the chemical antiseptics, which will not destroy them.

The only objection to the use of dry heat is that the danger of an excessive temperature damaging the instruments makes very careful watching of the heating-apparatus necessary. That this objection can be easily overcome, I will demonstrate later on.

All dressings can be readily freed of germs by the use of either dry

or moist heat. The dry heat renders the gauze less hygroscopic; but this can be obviated by first saturating the gauze with a ten-per-cent. solution of glycerine and drying before placing in the sterilizer.

As to the means of using heat for sterilization: For moist heat we have in the Arnold Steam Sterilizer a simple and efficient apparatus. With it, in a very short time, a temperature of between 212° F. and 215° F. can be obtained, as the steam generated is under moderate pressure.

Dry heat may be obtained by the use of an ordinary gas oven. In this, with the heat of a single Bunsen burner, a temperature of 400° F. can be had. As instruments would probably be damaged by such a temperature, it must be regulated by some automatic device. This can successfully be done by employing Reichert's thermoregulator, by which the temperature can be kept continuously within 5° F. of any given point. The instruments to be sterilized may be placed in the oven, in a tray, and in this removed while still hot, and immediately covered by an antiseptic solution or distilled water. The exposure should be at about 130° C. (266° F.) and continued for an hour.

An objection to using steam as a sterilizer for instruments is that it soon destroys nickel-plating, and rust immediately forms on the steel. This objection does not hold with dry heat. Dry heat is said not to ruin sponges, providing they are dry when placed in the sterilizer.

To sum up, we may say:

That in heat we have a most efficient sterilizer;

That it can be easily obtained, either in a moist or dry state;

That if care be taken not to exceed 150° C., but to go above 130° C., no harm will come to the instruments, and they will be absolutely sterile; and

That all dressings, gowns, towels, etc., can be treated satisfactorily by heat.

Dressings prepared by heat alone (aseptic dressings) are not sufficient for cases that are already septic. In these cases a chemical antiseptic should be added. Dressings sterilized by heat should be prepared just at the time they are to be used, and should be applied directly from the sterilizer.

Again let me repeat that aseptic instruments and dressings are useless without aseptic hands, and to have the hands aseptic they must be exposed to the chemical solution for a longer time than is ordinarily given. Simply dipping the hands in the solution is but to delude one's self. With nail-brush scrub the hands in hot 1.1000 bichloride for five minutes, after having previously washed them with soap and warm water, and see that no dirt remains beneath the nails.

A bacteriologist not long since remarked: "When surgeons use heat as their means of sterilization, they will have reached the ideal of asepsis." I think we may say that this means of sterilization is sure to surpass all others.

DISCUSSION.

Dr. PILCHER.—The paper is before you for discussion, gentlemen, as well as the general subject of sterilization of instruments by heat. Dr. John B Roberts, of Philadelphia, in response to my invitation, has consented to speak on this subject, and is present with us, and I will ask him to lead in the discussion.

Dr. ROBERTS.—I can say very little except what has been said. My feeling is much the same as Dr. Delatour's, namely, that we are not getting perfect asepsis in our instruments or dressings, and for the last six months I have been trying to get something which would give me a feeling of security when I go to an operation. First I had the idea of using steam heat; but it was unsatisfactory, because the drying of the instruments would make me just as uncertain as if they had not been steamed, because assistants and nurses are not certain to be aseptic, if you do not watch them. I think even we ourselves are not apt to be aseptic unless we are watched by our assistants. Having rejected steam heat, I looked about, during the past summer, to find some sort of an oven which would be near the thing I wanted, and finally I had made an ordinary laboratory oven. It is nothing but a copy of the oven that is used by bacteriologists in sterilizing test-tubes, an oven with double walls heated by one or two Bunsen burners. I have it standing in my private office, and have two Bunsen burners under it. I have not put the regulator upon it, because it stands right close to my desk, and I or my assistant watch it during my long office hours, and therefore have not needed the regulator put in, although I have thought of doing so.

In order to get instruments sterile and keep them sterile and not have the bother of carrying around an oven, I had made in Philadelphia a series of copper boxes of different sizes, using copper because it is a particularly good conductor of heat. I have a number of these copper boxes of different sizes with a dust-tight lid fitting exactly. Bacteriologists use sheet-iron boxes, like this one shown, which are dust-tight. This possibly is not quite as dust-tight as the bacteriologist's box. In this box I put loose instruments in the morning, then a copper tray, arranged to hold knives, is put into the top of it. I then shut the lid, and put the whole thing in the sterilizer, and let it stay as long as I think necessary. A little while before I am ready to leave my office I turn out the light and let the instruments cool down. The whole box

is then put in my case, and I do not open it until I get to the patient's house. If many instruments are to be used, I turn the lid of the box upside down, and use it for a tray to hold the antiseptic solutions at the time of operation. If only a few are needed, I take them out of the box as I need them, and I feel that I am using instruments that are almost perfectly aseptic. If I do not use them for several days, I am able to believe that no vegetable parasite has been able to gain access to them.

The dressings I treat in the same way. I have a small box in which I put pieces of cheese-cloth which has been boiled in hot water and soda, to get out the grease, and dried. This is baked as is the instrument-box, and is carried in my bag; thus I always have in my bag instruments sterile and dressings sterile. Such things as needles I prepare in the same way, putting them in bottles and the bottles in a box, so that my case is always primed or charged with aseptic needles, wire, sutures, instruments, and dressings, and I feel that I go to operations with much more comfort than when I used any other method of sterilization, even though I washed them myself with the greatest care.

You cannot bake instruments with cemented handles. The instruments here all have metal handles except in one or two instances, where they have riveted wooden handles. The bone handles, even if riveted, appear to become brittle if heated too high, and possibly at times, on account of the repetition of baking, even when the degree of heat is not very high. I have found practically that I dare not run my thermometer higher than about 130° C., which is about 266° F. Once my oven, being neglected, ran up so high that the instruments had reached about 150° C. The thermometer being at the top of the oven and the instruments at the bottom, made me believe, knowing the difference to be about fifteen degrees, that the instruments had been heated to that point, and you will see that some of these instruments have become oxidized. This does not take the temper out, but it makes them look not so pretty. There is no disadvantage in this; in fact there is some advantage, for they are not so likely to rust when imperfectly dried after washing. I have never seen the temper of an instrument spoiled in this way except on one occasion; that was a needle which had been in the oven, I do not know how long. I suspect it had got into the very bottom of the oven and lay directly over the flame, where it had been heated over and over again, and by being in the bottom had reached a higher degree of temperature than anything else.

I have been much interested in the sterilization of cutaneous surfaces. My custom is to carry in my operating-case two or three pieces

of the ordinary loofah, or wash-rag gourd, which is used like an ordinary scrub-brush. If it is an operation of importance, I have my patients take a bath, and then in addition I scrub the surface to be operated thoroughly, using this piece of loofah as a skin-comb, afterward throwing it away. This will not do for cleaning nails, because it will not enter underneath them, but it makes a very nice skin scrub for scrubbing the surface of the body. Of course if there is a great amount of dirt, this method is not sufficient, but in ordinary private practice it is hardly necessary to do more than scrub with soap and water and then irrigate with bichloride solution.

Dr. WUNDERLICH.—Since I have read the report of experiments which have been made by Dr. H. Davidsohn, I have followed his directions for the disinfection of instruments, and the results have been satisfactory to me.

After an operation the instruments are cleaned immediately with cold water, soap, and brush, and placed in a vessel containing cold water.

Syringes and other hollow instruments are cleaned and filled with water prior to being placed in the water-bath. The instruments must be completely covered with water, and the vessel closed with a cover to insure an elevation of temperature to 100° C. in all its parts; and the boiling is continued for five minutes. After removal from the water-bath, the instruments are dried with sterilized towels.

Prior to the next operation, the instruments are again subjected to the action of boiling water for five minutes; when cooled off, they are ready for use.

Dr. H. Davidsohn made numerous experiments in the Hygienic Institute of Berlin in order to ascertain by which method it would be possible for any physician to disinfect his instruments perfectly in a short time and without special apparatus: a method applicable in the house of the patient as well as in the office of the physician. He considers chemical reagents and germicides as inadmissible for this purpose, because they either injure the instruments or are unreliable and inadequate. He rejects dry heat, because it requires too much time: three hours' exposure being required at a temperature of 140° C. to kill the spores of anthrax.

Passing instruments through flame is objectionable, because it destroys the edge of the instruments, and not all of them can be subjected to it.

Moist heat in the form of a jet of steam is probably the most energetic disinfectant at our disposal; but for ordinary use of the physician it has this drawback: it requires a special apparatus, which is rather cumbersome and not easily transported.

Moist heat in the form of a hot water bath remains available; it is readily obtained and applied everywhere: and, as Davidsohn's experiments demonstrate, it fulfils all requirements for perfect and complete disinfection.

He made numerous experiments with pure cultures, but of more interest to the surgeon are the experiments made with mixtures of pus and cultures of staphylococ. pyogen. aureus and albus, streptococ. erysipelat., bac. pyocyaneus.

A medium sized test tube was partially filled with this mixture; the tube was placed in a water-bath in such manner that the margin of the tube was above the surface of the water, and no water could enter the tube and mix with its contents.

The vessel was covered, and the temperature kept at 100° C. for five minutes, with the result of destroying all the pyogenic bacteria.

The same experiment was made with a mixture of pus and a medium in which spores of anthrax were suspended. Exposure of five minutes' duration to a water-bath of 100° C. sufficed to destroy these most resistant of all pathogenic micro-organisms.

Subsequently, D. brought mixtures of pus and cultures in contact with instruments, such as catheters, artery-forceps, scissors, hypodermic syringes. Some of the instruments he placed in the hot water-bath when the pus was still moist; other instruments, after the pus had become quite dry; the result was the same in every instance, complete sterilization after five minutes' boiling.

He tested the water in which the instruments had been boiled, taking samples with specially constructed tubes from different parts of the vessel, near the surface, near the bottom, near the sides and in the centre, and invariably found it sterilized.

Dr. RAND.—I have had no experience with dry heat in the sterilization of instruments, and until the last few months I have been satisfied with the process described by Dr. Wunderlich; it has always seemed to me that boiling water was a good agent by which to thoroughly sterilize instruments.

The last few months I have used the apparatus sold in the market for sterilizing milk, the name of it I have forgotten, but it consists of a copper basin and a receptacle above in which you can place your instruments and steam them under a certain amount of pressure, and the steam is generated very rapidly. My habit has been to steam instruments after they have been used; and then before an operation, if it is one of importance, I steam them again and turn them out of the apparatus into a sterilized towel, and carry them in this way, without drying, to the operation. If dry heat is better than steam I should like to try it, but heretofore I have been satisfied with steam. Steam

has seemed to me especially useful where hollow instruments and instruments that contain a great many joints are to be sterilized.

Dr. ROBERTS.—I would like to add one word more. What drove me to the use of dry heat was the very difficulty mentioned here by Dr. Rand, the difficulty of getting instruments boiled. I used to try to boil my instruments. At the hospital I could generally get boiling water, but not always; sometimes the engineer would be out or the plumber would be fixing pipes; and a number of times it seemed impossible to get boiling water. At private houses it is frequently impossible to get boiling water unless you waste a good deal of time, and I find I can do better work and get away quicker by taking everything with me, dressings, solutions, scrubbing material, and sometimes soap, particularly among the poorer classes. That was one thing that made me abandon the use of hot water.

I am inclined to believe from my reading that any ordinary bacillus or coccus, that is, the common pyogenic germs that surgeons are apt to come in contact with in surgical practice in this country, are destroyed by the boiling or a few degrees above the boiling point when moist heat is used. Dr. Wunderlich has truly said it takes a higher degree of dry heat than moist heat to kill germs or spores. It is known, moreover, that spores can stand a great deal more heat than the mycotic individuals. But all ordinary forms, except the anthrax bacillus, are killed a very little above boiling point. Spores are killed by a variable heat, but whether the heat be moist or dry, in each instance the spores require more heat than the individual; 130 degrees Centigrade, which would be 266 degrees Fahrenheit, will kill all spores and all individual germs that exist, as far as known, if this heat is kept up for a couple of hours. I believe I am correct in stating those facts. Now, if we can by running our instruments up to 120 degrees Centigrade, which my practical experience seems to show to be not deleterious, and if we can take our instruments so made sterile in a box and not open them until we begin to operate, it seems to me that we can go to an operation with a quiet conscience. I can go to the dirtiest house in Philadelphia and feel that my operation is absolutely aseptic if I have my hands sterile; for I can take sterile instruments, dressings and towels boxed in a box, such as I have described, and feel that I am technically and theoretically and conscientiously aseptic. It gives me a confidence that I never had before; and I do not think it a misplaced confidence. Moreover I gain time, and, as time is money, when I save it, I feel that something has been gained. After finding out what the instruments would stand (it took me some little time to find that out and caused me to throw away some instruments which I spoiled) I have realized exceedingly great comfort in the knowledge that I had sterilized instruments.

The fact that the anthrax bacillus, which I believe to be the only germ which requires for destruction of its spores 130 degrees Centigrade, is almost unknown in this country, renders it unnecessary to bake my instruments at a higher temperature than 110 to 120 degrees Centigrade, which is my limit. I feel, then, that they are free from all pus-forming spores, which are the spores and germs which we as surgeons must prepare for if we eliminate the anthrax. Of course, if anthrax spores are suspected, especial precautions or a higher temperature must be employed.

Dr. SPEIR.—I would like to express my satisfaction with the box which has been produced, and the pretty case of instruments. It seems to me to fill the bill, as it cannot be filled by the other method. I recollect a case of laparotomy in which the surgeon who operated had come a great many miles on a train, and the operation was to be performed at one o'clock at night at a hotel, and it was impossible to have anything like aseptic surgery. But with this little box I think we would have been able to have performed that operation aseptically. That instance alone, I think, is sufficient, to give Dr. Roberts a great deal of credit for his introduction of this method, and I appreciate it very much.

Dr. PILCHER.—It seems to me there is one point which must strike us all as the outcome of our attempts to secure immunity from infection in operative work, and that is, that the practice of aseptic surgery is a very difficult thing to accomplish absolutely. It is very interesting to look back upon the progressive development which has been made in the methods adopted for securing immunity from germ infection in surgical work; the very crude attempts which characterized the earlier work; the prevalent idea which, until a very recent period, was the primary one that we must keep out from the wounds that were made harmful materials which the air about might be bringing to it; the immense dressings which were heaped upon a wounded surface;—we cannot but smile as we think of the feticism which seems to have clung about the use of particular agents. The dependence upon most insufficient means, such as dipping the fingers for a moment or two in bichloride solution, or rinsing off the fingers in carbolic solution, and the like, has been remarked here this evening. One of the most pitiful things that I ever saw, occurred in the work of the great pioneer and master of antiseptic surgery, the one whose name will always be revered by us as the one who led us into the promised land, and that is Sir Joseph Lister, who in his work at Kings College Hospital, is handicapped by having about him an ever-changing set of young men assistants, whom he has to train, as they change every few weeks, and watch them, while at the same time he endeavors to do his

own work. In an important operation which I saw him engaged in, a young man who was about to assist him, who came fresh to the field to take part in the handling of the instruments and the wound, was going to do it without any previous preparation. Sir Joseph observing him, in accents of entreaty asked him to first dip his fingers in the bowl of carbolic acid solution, as if the dipping of the fingers for a moment until they got the smell of carbolic acid on them was going to make them pure. We know better than that now, that the smell of carbolic acid does not mean that the individual is disinfected.

It is the methods and the results of bacteriologists upon which we must depend for our guidance in the future, as it is from them we have drawn all the real knowledge we have with regard to aseptic work. It is from these experiments we know what brings about the disastrous results which come at times. It is from their work, it seems to me, that we must draw the lessons by which we are to be guided in our own aseptic efforts in the future. We certainly have passed the time when there can be any question as to the desirability of securing immunity from germ infection in all our surgical work. At the same time it seems to me that we ought never to become so persuaded that we have reached perfection in the practice of our technique, that we can venture to ignore the possibility of failure. It has been my own experience personally, and also has been my observation in the experience of others, to find cases in which, though the operators have felt that they had succeeded to an unusual degree in securing freedom from all disturbing influences, nevertheless to find disappointment awaiting them in those very cases, so that sometimes the most disastrous results have happened where operators felt they were the most sure of escaping any source of infection. For this reason up to the present moment I have felt that it was not only important for us to secure as far as possible the complete purification of the hands of the operator and of the field of operation and of the instruments that are being used and of the appliances brought in contact with the wound, but that it was important for us never to forget to provide for the removal from the wound, as far as possible, of all material which would be the ready pabulum for any infecting substance that might accidentally have crept in. So I am not ready in ordinary work to give up drainage, or to give up whatever method may promise to secure the escape from or the diminution of the formation of the albuminous materials ready to enter into decomposition in the wounds that we make.

I am convinced that in the use of heat for the sterilization of instruments and of appliances, as it becomes general, we are making another decided advance in our ever-present contest with infective

material, and the extremely practical and easily managed methods which have been brought to us by the essayist of the evening, and by Prof. Roberts, are of such a character as to make it evident that there is nothing in the use of dry heat but that may be at least fairly within the command of any gentleman who does very much surgery. Of course, the more we complicate these matters, the more we try to reach perfection in these matters of detail, the more difficult it is for one who is not doing it all the time, as are these gentlemen who have presented these things to-night, to have them at command just when they are wanted. In hospital work it may be more easy, and yet I am persuaded by experience that even there it is not always easy to get just what we would like to have done just at the moment when we would like to have it, however well ordered the hospital may be. For the sterilization of instruments, then, we may hope that dry heat may become more generally used than it has been heretofore, and that in the use of dry heat we may be able to secure the purification of our instruments. But for persons in general who may not have occasion to use sterilized instruments every day, and who are not likely to provide themselves with even the simple apparatus for dry heat, the apparatus for using boiling water may be more readily available as a rule. For this purpose a small asparagus boiler, which may be bought for seventy-five cents, is an excellent device. This, when filled with water, may be put on the range or on the gas-stove or over an ordinary nursery lamp and boiled as long as desired; the ordinary instruments can be put in it, and by means of a little tray which lifts in and out, may be readily removed from the boiling water. This boiler may be taken to the house of a patient, the instruments there boiled and left in until the moment for their use arrives.

I have been looking, however, not only for something which will sterilize the instruments, but also something that may be available in the operating-room for sterilizing all appliances, dressings, towels, night dresses, the gowns that we use, and blankets with which the patient is covered, and all that sort of thing. It seems to me it is quite important that we should have a wide extent of sterilized surface about our field of operation, in order to diminish to the greatest degree possible danger of infection; for, as has already been remarked this evening, it is difficult for the surgeon, however he may be permeated with the idea of aseptic work, it is difficult even for him to avoid making a slip, so that the less opportunity one has of becoming contaminated, the more likely he will be to do uncontaminated work.

The sterilizer, which Dr. Rand has mentioned, the Arnold sterilizer, seems to give to us a practical method of accomplishing this sterilization of the accessories of our work. This sterilizer comes to us so

thoroughly guaranteed upon the part of bacteriologists in whom we have confidence, that I have been led to put considerable confidence in its efficacy myself. Considerable experience and multiplied tests give reason to believe that it is abundantly able to absolutely sterilize all articles left for any considerable time subjected to the steam generated in it. The special feature of this sterilizer is found in the method whereby a small amount, but an extensive surface of water is subjected to the action of the heat. The heat is applied at a time to a very shallow copper reservoir underneath the main reservoir; this shallow reservoir is kept filled with water by percolation from the larger one above. From this shallow reservoir there passes up a pipe which conducts the steam into the sterilizing chamber above; over this sterilizing chamber is placed a jacket to keep the heat within. By thus confining the steam a heat somewhat higher than 212 degrees, not more than 215 degrees may be obtained in the apparatus. Into the sterilizing chamber may be put the dressing materials, towels and sheets, etc., and there, after sterilization, they may remain protected from contamination till such time as we wish to use them.

I have had made for hospital use one the size and shape of an ordinary boiler, which has a double steam-pipe, into which two or three blankets and a multitude of other things may be put at the same time.

Dr. DELATOUR.—I would like to say one word about sterilization of the air. Bacteriologists say that if the air has been thoroughly steamed, that is, the room has been filled with steam, the bacteria will be stuck around in such a way that there will be none to drop or cause any danger.

In private houses it is probable that the pathogenic germs are not to be found. In hospitals the steam spray can usually be placed in the room and with it the air steamed.

It is claimed that boiling is a more efficient sterilizer at the same temperature than dry heat; it is more effectual than simple steaming without any pressure, but it does not seem possible that boiling for so short a time as five minutes can render all instruments entirely sterile. Another thing to be considered is the carrying of dressings. In the smaller sterilizers all dressings that are necessary for use at an ordinary operation can be sterilized, and that is so small that it can easily be carried and used at the house of any patient.

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EDITORIAL.

NEW YORK PHYSICIAN'S MUTUAL AID ASSOCIATION.

The Annual Report of the Board of Trustees of this Association, for the year just closed, contains abundant evidence that the merits of its work are gradually being understood and appreciated, in New York City at least, by the members of the profession. The membership has, during the past year, increased from 505 to 715, a net gain of 41 per cent. We regret, however, to notice that the increase of Brooklyn members has been very small. While the Medical Register contains the names of 715 regular physicians practising in this city, but 119 of these are members of the Association. Why our local representation is so small is inexplicable. It must, we think, be due to apathy; certainly it can not be from ignorance of the purposes and value of the organization, for as is well known by all, and fittingly acknowledged by President Lewis, our esteemed townsman, Dr. Reese, has systematically and faithfully presented these claims through a long series of years.

In no better way can physicians provide for the families of their professional brethren who may die possessed of but little of this world's goods, than by joining this Society; and at no more opportune time does this help come, than just when the head of the family is taken away.

An additional incentive for joining this Association, is that which has for its object the rendering of assistance to one's own family in times of want or affliction. The report before us shows that as a simple life insurance, no man over thirty years of age can secure the same amount as is paid by the Association for the same money. Three cents a day will insure one's life for \$650. This rate is less than that of the Mutual Life Insurance Company or the American Legion of Honor, one of the largest assessment Orders in the country. In looking

over the amounts paid to the families of deceased members during the past year, there is not an instance in which anyone had paid one-half the sum received by his family at his death. In one case, but \$8 had been paid, still the family received \$550; in another case, only \$37 had been paid, while \$500 were received.

Whether the motive be to provide for one's family or for that of some unfortunate brother-physician, the result should be the same, to cause every one of the profession to make early application for admission to membership in 'The Physicians' Mutual Aid Association.

THE EPIDEMIC OF INFLUENZA.

During the latter part of October, 1889, an epidemic of influenza declared itself in the City of St. Petersburg. The weather at that time was unusually warm, moist and foggy, and the prevailing wind was west. During the first three weeks it is estimated by a reliable medical journal of that city that from one-third to one-half of the population was attacked, or, in other words, from 396,000 to 594,000 persons. The disease spread with equal intensity among all classes. In the schools the absentees among pupils and teachers amounted to from 25 to 50 per cent. Factories were closed, hospitals overcrowded, physicians and apothecaries overworked. Neither sex was spared, although some physicians thought that there was a disproportionately larger number of males attacked. Children were not exempt, the number of inmates of the children's hospitals being doubled. The question of contagion is still *sub judice*. The period of incubation was determined to be two days. The attack began with weariness, headache, and chills, followed by pain in the limbs, and fever; the temperature rising to 104° F. Three forms of the disease were observed: 1. The purely nervous form. 2. The form characterized by catarrhal affection of the respiratory mucous membrane. 3. The gastric form, with catarrhal affection of the digestive tract. In the latter part of November the disease was reported from other Russian cities, Moscow, Wilna and Kasan. Such is a brief statement of "La Grippe" as it has been observed in Russia.

In a letter to a New York medical journal, a physician of that city reports a case of influenza which occurred in his practice on December 5th, and which he believes to be one of the early cases in the epidemic which now prevails in the United States. In Boston the beginning of the epidemic seems to have been about December 17th, while so far as we can learn it was not until about Christmas that it claimed any considerable number of victims in Brooklyn. From that time to the present the physicians and druggists of the city have been employed all

day and much of the night in attending to the wants of their clients, the number of visits to influenza patients being for some physicians thirty a day for several days. This extraordinary call for medical services has been very marked in the dispensaries of the city as well as in private practice. In the clinic of one attending physician forty patients applied for treatment during one afternoon. It would be idle to attempt to estimate the number of persons who have had the disease in Brooklyn, but it must be in the tens of thousands.

Unfortunately, the anticipations of physicians have not been realized as to the mildness of the disease and its freedom from complications and dangerous sequelæ. Pneumonia, especially, has been more prominent than usual among the factors of mortality. During the week ending January 11, 1890, the deaths were 624, an increase of 153 as compared with the preceding week, and representing an annual death-rate of more than 38 per 1,000 of the population! A death-rate rarely exceeded in the heat of summer when cholera infantum prevails.

What has been said of Brooklyn is equally true of all the cities and towns of the United States. Indeed, so far as we have heard, no community, however small, has escaped. The epidemic is of too recent a date for any comprehensive account of it to be written. It is, however, to be hoped that the medical societies of the civilized world will collect the necessary data for their respective districts, and that from these a scientific history of the epidemic may be written. The Kings County Medical Association has already discussed the subject, and the Medical Society of the County of Kings will take the subject up at its February meeting.

DOCTORS AND THE LOCAL PRESS.

One of our local dailies, having caused its reporters to interview the physicians of Brooklyn and obtain their opinions on the present epidemic of "grippe," says, editorially, that "it is apparent that, though doctors may disagree as to the presence of the malady commonly termed the 'grip,' there is raging in an almost epidemic form some ailment which leaves its traces on weak lungs, and whets the scythe of the dread reaper. It would surely be of great public benefit if the doctors, instead of wrangling over the presence or absence of a specific trouble, should recognize the fact that sickness is more general than usual, and apply themselves to find a remedy to check it." That is to say, having requested physicians to express their opinions, proving that all were not agreed as to the cause of the epidemic, these differences are denominated "wranglings," and the physicians who gratuitously devoted each a half-hour to the enterprising reporter are denounced, and advised that they could be better employed in seeking for a remedy.

PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular monthly meeting of the Medical Society of the County of Kings was held in the Society rooms, 356 Bridge Street, on Tuesday evening, December 17, 1889, at 8 o'clock.

There were about 75 members present. Dr. A. Ross Matheson in the chair.

The minutes of the previous meeting were read and approved.

The Council reported favorably upon the following applicants for membership :

Drs. Wm. R. A. Carley, Arthur E. Burns, Geo. F. Lloyd, Henry Bullwinkle, Jesse T. Duryea, Gilman Osgood, William Stewart, Robert Schmeltzer, Wm. Neuss, Walter M. Friend, Purdy Sturges, Henry R. Price, Wm. A. Fries, John E. Sheppard, S. S. Brown, Walter Spencer Fleming.

The following applicants for membership, having been favorably reported upon by Council, were declared elected :

Drs. Jno. E. Walsh, Benj. M. Bolton, J. C. Fitzsimmons, George B. O'Sullivan, Lawrence Coffin, Wm. J. Turner, Robert H. Duncan.

The following were proposed for membership :

Drs. Wm. Moser, 158 Ross Street, Coll. P. and S., N. Y., 1888 ; proposed by Dr. James L. Kortright ; Dr. David Myerle.

Florence A. Belknap, 131 DeKalb Avenue, Ann Arbor, 1886 ; proposed by Dr. O. A. Gordon ; Dr. Walter B. Chase.

A. W. Waterman, —, N. Y. Univ. Med. Coll., 1886 ; proposed by Dr. Wales Carey ; Dr. John Sheppard.

James M. Sayles, 315 Fifteenth Street, L. I. C. H., 1884 ; proposed by Dr. H. Beeckman Delatour ; W. M. Hutchinson.

Charles J. Peterman, Hull and Rockaway Avenue, L. I. C. H., 1883 ; proposed by Wales L. Carey, M.D. ; Dr. John Sheppard.

Geo. D. Barney, 101 Hancock Street, L. I. C. H., 1887 ; proposed by Dr. Charles Jewett ; Dr. Robt L. Dickinson.

SCIENTIFIC BUSINESS.

The Committee on Obstetrics presented their report in three papers as follows :

"Source of Puerperal Wound Infection," by Charles Jewett, M.D.

"Note on Immediate Repair of the Cervix after Labor," by Robert L. Dickinson, M.D.

"Separation of the Symphysis Pubis, with a case," by George McNaughton, M.D.

Dr. J. G. Johnson then read a paper, entitled "Disease Germs and Disinfectants," which was discussed by Dr. Joshua M. Van Cott, Jr.

UNFINISHED BUSINESS.

The Secretary stated that the amendment creating the position of counsel and attorney-at-law to the Society, presented at the last meeting, had, at the suggestion of the gentleman who was proposed for the position, been abandoned.

NEW BUSINESS.

The Secretary announced that the following amendment to Chapter VII. of the By-Laws would be acted upon at the January meeting of the Society :

Amend Chapter VII. by adding a new section :

"Chapter VII., Sec. 7.—Before entering upon the discharge of his duties, the Treasurer shall give a bond to the Society in the sum of dollars, with one or more sureties, to be approved by the President and one of the members of the Board of Trustees, for the faithful performance of his duties as such Treasurer."

Acting under the direction of the Council, Dr. Chase announced that the following amendment would be acted upon at the January meeting :

Amend Chapter XI. of the By-Laws by adding a new section, viz. :

"Chap. XI., Sec. 7.—The reinstatement of members shall be determined by the Council in conformity with Chap. XIII., Sec. 7."

Amend Chap. XIII., Sec. 7, to read :

"Chap. XIII., Sec. 7.—Any member who shall continue 'in arrears with the Treasurer' for one year, after having twice received due notice of the existence of this By-Law and of the amount due from him, shall be no longer considered a member ; *and the member shall not be reinstated except by a two-thirds vote of those present at a regular meeting of the Council and upon such conditions as the Council shall prescribe.*"

Dr. Chase stated that this amendment had been suggested as the Council had deemed it advisable that such matters should be conducted with as little publicity as possible.

After some discussion, on motion of Dr. Johnson, duly seconded and carried, it was

Resolved, That in the sense of this Society it is desirable that a steam plant for the disinfection of woollens, similar to the plant suggested by the Health Department's bacteriologists of New York City, be adopted by the authorities of the City of Brooklyn."

Resolved, "That the Secretary be instructed to notify the Mayor and city officers of the adoption of this resolution."

NOMINATION OF OFFICERS.

The nomination of officers for the ensuing year was as follows:

President—Walter B. Chase, M.D.; George McNaughton; Isaac H. Barber.

Vice-President—Frank E. West, M.D.; William Maddren; J. M. Van Cott, Jr.

Secretary—Wm. M. Hutchinson, M.D.

Asst.-Secretary—D. Myerle, M.D.

Treasurer—C. E. Gunther, M.D.; Charles N. Cox, M.D.

Librarian—Joseph H. Hunt, M.D.

Censors—Geo. A. Evans, Glentworth R. Butler, Robert L. Dickinson, Fred. D. Bailey, Herman Bender, R. Scrimgeour, Ernest Palmer, Z. T. Emery, J. L. Kortright, Joel W. Hyde, Geo. W. Brush.

One Trustee—Dr. A. Ross Matheson, Dr. Geo. R. Fowler.

One Delegate to State Medical Society—Dr. Ernest Palmer, Dr. Wales L. Carey, Dr. Frank P. Hudnut, Dr. J. M. Winfield, Dr. Robt. L. Dickinson, Dr. Joel W. Hyde.

There being no further business, on motion, the meeting adjourned.

W. M. HUTCHINSON,
Secretary.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Programme for the February meeting (Feb. 18th): "Photography in its Uses in Medicine," by Henry Beeckman Delatour, M.D. Discussion of "La Grippe," or Epidemic Influenza.

KINGS COUNTY PHARMACEUTICAL SOCIETY.

The regular meeting of this Society was held Tuesday, December 10th. Called to order at 2.45 p. m. by President Davis. Messrs. Herman Mairs, William C. Anderson and Lorentz Cantor were admitted to membership.

Committee on telephone matters reported that they hoped to have some definite scheme to propose at the next meeting.

Committee on finance reported balance of \$1,628 on hand.

Dr. Eccles, of committee on Nicot resolutions, reported a set of resolutions, which were received.

Board of trustees recommended that Society transfer its account

from Brooklyn Trust Co. to Kings County Trust Co., January 1st.; also that \$100 be appropriated for use of lecture committee.

On motion, Mr. R. Cloerner was added to lecture committee in place of Mr. L. E. Nicot, deceased.

Letter was read from Mr. Charles F. Schleussner declining to serve on Board of Pharmacy.

Special meeting was called to order at 4 P. M. by President Davis, and object stated, viz., to elect a member of the Board of Pharmacy in the place of Mr. Louis E. Nicot, deceased.

Messrs. Sayre and Chagnon were appointed tellers. Mr. Schleussner nominated Dr. Eccles, Dr. Sheets and Mr. Werner seconded the nomination. Mr. D. Forest nominated Mr. D. L. Cameron. Mr. Perkins seconded this nomination. Ballot was taken, and Mr. Cameron received 28 votes, Dr. Eccles 19, one blank, and one not voting—49 in all. Mr. Cameron, having received a majority of the votes cast, was declared elected. Adjourned.

F. N. BLISS, *Sec'y.*

BROOKLYN MEDICAL MICROSCOPICAL SOCIETY.

The twenty-ninth regular meeting of the Society was held at the Hoagland Laboratory on January 8, 1890, with the President, Dr. Heitzmann, in the chair. After the transaction of the regular business of the Society, during which Drs. Eugene Hodenpyl and Ira T. Van Giesen were unanimously elected to active membership, the paper of the evening, on "Villous Tumors of the Bladder," was read by Dr. Jones. It was illustrated by plates and specimens, and discussed by Drs. Heitzmann, Wilson and Jones. After the announcement of a paper by Dr. L. Heitzmann on "Bacteriological Examination as an Aid to Clinical Diagnosis" for the next meeting, the Society adjourned.

By order of the committee,

RICHMOND LENNOX, *Sec.*

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

A NEW OPERATION FOR THE CURE OF INCONTINENCE OF URINE.

R. Gersuny, Vienna (*Centralblatt f. Chirurgie*, Nov. 25, 1889). G. devised a method for the treatment of that form of incontinence characterized by persistent dripping of urine, and due to disturbances of the function of the vesical sphincter. The operation consisted in partially separating the urethra from its attachments, leaving it well covered with its underlying structures, and twisting it in its long axis; it was then sutured again in position. The operation was performed three times upon one patient (a young female) the torsion not being sufficient in the first two attempts. The amount of torsion finally amounted in all to one and a quarter turns. The patient reports, six months afterwards, that she can retain the bladder-contents for five hours, and that fully four minutes are occupied in passing a pint of urine.

UPON BONE TRANSPLANTATION.

Adamkiewicz. (*Kaiserl. Akademie der Wissenschaften in Wien*, May, 1889. *Akademischer Anzeiger*, No. 2.) A. has determined, by means of a large number of experiments, that without exception and with absolute certainty, not only can bone, loosened and taken from its original location be returned (Macewen), but that bone taken from another animal or from another species, and without the necessity for special preparation or accurate fitting of the fragments, can be successfully transplanted.

The periosteum is of no importance in promoting growth in such transplantation; the edges of bone entirely bared are covered by newly formed periosteum. The organic connection is formed by connective tissue rich in nuclei, and in this, ossification progresses either from special centres, or from the surrounding exudates. The growth of bone finally replaces the connective tissue and complete bony communication is established between the original bone and the transplanted portion, as shown by injection into the vessels passing to both. The failure of this bony connection is only to be found when the space between the bones is unusually great.

UPON THE CAUSES OF PERITONEAL ADHESIONS.

Archiv. (*Klinische Chirg.*, Bd. 37, p. 745). These studies made upon lower animals were made with special reference to the question

of occurrence of ileus after laparotomy. The researches of the author found that flushing the abdominal cavity with antiseptic fluids did not produce adhesions, and that this result did not follow rough handling or vigorous brushing, so as to deprive the serous membrane of its endothelial covering. Iodoform, blood coagula remaining in the abdominal cavity, irritating injections, etc., also failed to produce adhesions. Only foreign bodies, such as ligatures and sutures and sloughing portions of the abdominal contents were found to be the origin of peritoneal adhesions. These latter are brought about by attempts on the part of the serous covering with which the foreign body comes in contact to encapsulate the same.

The practical point in this connection to the operating surgeon is to limit as much as possible the application of sutures and ligatures, and to leave as short projecting ends of these as possible. The fear that blood clots may be the source of mischief, by becoming organized, is shown to be groundless.

THE CURABILITY OF PYÆMA.

Rose (*Deutsche Med. Wochenschrift*, 1889, No. 24). The fact that the micro-organisms of pyæmia, unlike the anthrax bacillus, are not contained in the circulating fluid, but are contained in thrombi and emboli, producing circulatory disturbances, suggests that a treatment, directed to destruction, on the one hand, of the organism, *in loco*, on opening and curretting abscesses, etc., and treating the same with the copious use of antiseptics, and by the systematic use of those tonic measures best calculated to increase the powers of resistance of the individual, promises to be successful according to R.

IS HERNIA TO BE CONSIDERED AS AN ACCIDENT?

W. Roser (*Marburg*, 1889, 225). A professional opinion as to the relation of abdominal hernia to accident insurance, as well as the question of responsibility of corporations, where damages are claimed, based upon the occurrence of this condition, constituting a portion or whole of the injuries sustained, is of interest both to the jurist as well as the surgeon. R. contended, and his views are upheld by quotations from various writers, that this condition was not to be considered as resulting from an accident, for the reason that the formation of the most important portion of the hernia, namely, the sac, occupies a period of time extending, in some instances, over many years, and frequently is shown to be a congenital condition. The occurrence of hernia, resulting as it does from a gradual traction and pushing forward of a certain and single portion of the abdominal wall, cannot be designated as an accident, particularly as a number of such herniæ depend upon peculiar local conditions, such as the existence of large

masses of fat. On the contrary, the occurrence of strangulation is always to be considered an accident, under whatever circumstances it may occur.

UPON THE DIMINUTION OF UREA IN MALIGNANT DISEASE.

F. Ranzier (*G. Masson, Paris, 1889*). Contrary to the usually received opinion, that, in malignant diseases the cachexia is the immediate cause of death, the proposition is advanced by Rommelaere, of Brussels, that in all cases of malignant tumors, wherever their site, or whatever their microscopical characters, the daily excretion of urea is always diminished, and in some instances, to a remarkable extent. R. follows the Brussels scientist, and further declares, as a result of a large number of observations, that the diminution of urea bears a direct relation to the disturbances of the ultimate metamorphosis, as well as upon the quantity and quality of the food ingested. The value of these observations resides particularly in the differential diagnostic significance, in doubtful cases, for instance, in examples of intra-abdominal growths, of the presence or absence of this symptom. Here, as indeed in all instances of excessive diminution of urea, a positive contra-indication to operative procedure exists, in view of the risks of a post-operative uræmia.

PYO-STERCORACEOUS FISTULA.

Trélat (*Bull. et mém. de la soc. chir. de Paris, t. xiv.*) T. reports two cases of the above. One of these followed typhoid fever, and closed spontaneously. The other followed peri-typhlitis, and was closed by the following operation: the fistula was incised as widely as possible, baring the opening into the bowel; the latter was freed from its adhesions, and the opening closed by sutures.

The author points especially to the necessity of freeing the bowel from its adhesions before suturing the opening of the fistulous tract leading to the same. In no case has a successful result followed in which a failure to take this precaution was noted. Fistulous openings in the neighborhood of the umbilicus, leading from the direction of the lesser pelvis, and those connected with the female genital organs, are especially unfavorable for operative interference. In the latter, particularly, the adhesions are very extensive, and the loosening the bowel from its adventitious attachments is almost an impossibility.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

MINUTE ANATOMY OF THE PLACENTA IN EXTRA-UTERINE GESTATION.

D. Berry Hart (Ed. Med. Journ., Oct., 1889). This brief paper gives the results of a histological study of the ectopic placenta in the following material :

1. Tube with placenta attached from a ruptured tubal gestation at the second month.
2. Broad ligament gestation at the fourth month.
3. Abdominal gestation entirely extra-peritoneal and at nearly full term.
4. Abdominal gestation, with foetus probably intra-peritoneal and placenta certainly extra-peritoneal.

In the tubal gestation the villi lay imbedded in decidual cells, no intervillous system existing. The muscular wall, however, contained large sinuses.

The broad ligament pregnancy illustrated the destructive changes which take place in the placenta when it is developed in the connective tissue. The villi were less perfect in contour, blood-extravasation was present, and the decidual cells were few and less perfect.

In advanced abdominal pregnancy, the placenta being in pelvic connective tissue and but little displaced, the villi were fairly perfect, decidual cells were found and large extravasations of blood, which perhaps indicates an attempt at a placental sinus system.

In abdominal pregnancy with extreme displacement of the placenta, the placenta was found converted into a mass of organizing blood-clot, showing great compression and distortion. There was an entire absence of decidual cells and no recognizable intervillous sinus system. The abdominal veins at the placental site, however, were enlarged.

The damage done to the placenta in extra-uterine pregnancy is in proportion to its displacement.

The foetus is frequently killed by the injury sustained by the placenta. When the foetus escapes by secondary rupture into the peritoneal cavity, and the placenta suffers little displacement and little disturbance of its functions, the gestation may go on to a more favorable termination.

MITRAL STENOSIS AND LABOR.

D. Berry Hart (Ed. Med. Journ., Aug., 1889). Three more cases are reported, in two of which post-mortem examinations were held with

results confirmatory of Dr. Hart's previously published conclusions. He finds that pregnancy accelerates the morbid changes. Fresh endocarditis is lighted up, the obstruction is increased and compensation fails. The prominent danger is from sudden over-distention of the right heart on the completion of the third stage of labor.

The extent of the dilatation of the right heart may be determined during life by the area of percussion-dulness, the existence of venous pulsation and of hæmoptysis.

For treatment, it will be remembered, Dr. Hart advises strophanthus, forbids ergot and other measures that tend to prevent a moderately free blood-loss at the close of labor and recommends venesection if required to relieve the right heart.

THE ORIGIN OF PERITONEAL INFLAMMATION.

Bumm (*Archiv. f. Gyn.*, B. 36, II. 3) distinguishes the following forms of peritonitis:

1. The non-infectious form, which originates from the action of mechanical or chemical irritants, without micro-organisms.

2. The septic forms caused by micro-organisms (*a*) a streptococcus peritonitis. This form is regularly found in the peritonitis of puerperal women. Its purulent secretions are infectious. (*b*) A putrid peritonitis after abdominal operations or perforation of the intestines. Its secretions are not infectious.

3. Specific inflammation of the peritonæum caused by the influence of specific germs. To this form belongs especially tuberculous peritonitis but not gonorrhœal. Gonorrhœal virus when pure is aseptic. It leads generally only to a fibrinous inflammation. The gonococcus thrives only on mucous membranes; on a serous surface it soon perishes.

THE FORCEPS OPERATION.

Münchmeyer (*Am. Jour. Med. Sci.*, Jan., 1890) makes a critical study of 206 forceps deliveries in 7,322 labors from the case books of the Dresden clinic. The frequency of forceps operations was 2.8 in every hundred labors. The total morbidity was 32 per cent., much greater in high operations. The mortality was 3.4 per cent., but in no case attributable to the forceps alone. Extensive lacerations occurred in 119 women; 141 cases had no post-partum fever. The foetal mortality was 29 per cent.

M. concludes that high applications of the forceps should be restricted to experienced hands, and in all cases the instrument should be used as rarely as possible. Feeble pains or the absence of pains never alone justify resort to the forceps. Positive danger to mother or child is the only valid reason for their use. In formulating these conclusions the author has not been unmindful of the fact that in many

instances the condition which called for the forceps, as well as the instrument itself, contributed to the unfavorable results.

CAFFEIN IN POST-PARTUM HÆMORRHAGES.

Misrachi (*Annals Gyn.*, Dec., 1889) commends in strong terms the use of caffein in the treatment of post-partum hæmorrhage. It acts directly as a cardiac tonic and stimulant, and as a remedy for the acute anæmia of the nervous centres. Indirectly, as a general excitant, it promotes uterine contractions. Ergot should also be given in combination with it as a direct excito-motor of the uterus.

The following is a modification of Tanret's formula for the hypodermic solution :

Caffein,	-	-	-	gr. iiss.
Sodii Benzoat,	-	-	-	gr. iij.
Aq. dest.,	-	-	-	3 ss.

This quantity may be injected subcutaneously from three to five times, at intervals of fifteen minutes.

ALCOHOL IN THE TREATMENT OF PUERPERAL FEVER.

Martin, of Berlin (*Annals of Gyn.*, Nov., 1889) pleads for the more extensive use of alcohol in the therapy of puerperal fever as proposed by Runge. It acts mainly by fortifying the resisting and recuperative power of the individual, and is particularly adapted to the stage of general septic infection.

The plan of treatment is not intended to replace but rather to supplement local disinfectant measures and the use of tonics and forced feeding.

The forms of alcoholic most used by Martin have been cognac, champagne, the heavy wines and punches. The quantity given amounted in many instances to little less than a bottle of cognac or its equivalent daily. Several severe cases of septic disease in childbed are reported in detail, which afford striking proof of the value of alcohol in the treatment.

HYPODERMIC INJECTIONS OF A COMMON SALT SOLUTION IN POST-PARTUM HÆMORRHAGE.

This plan of treatment in acute anæmia has been successfully employed in the Dresden Lying-in Hospital in a large number of cases. The quantity of fluid used is nearly a quart of a six per cent. solution. The solution should be sterilized by boiling, and cooled to 98° F. The infraclavicular or infrascapular regions are the preferred sites for the injection. The dispersion of the fluid may be promoted by gently manipulating the swollen tissues about the point of puncture.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M.D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

THE RELATION OF TONSILLITIS TO RHEUMATISM.

Haig-Brown (British Med. Asso., Aug. 1889) classifies tonsillitis as specific (exanthematous or diphtheritic), sporadic or epidemic, follicular and interstitial. In all cases of tonsillitis the whole structure is involved, but the great majority of cases have the intensity of the disease manifested in the follicles. Occasionally the inflammation is more marked in the interstitial tissue.

These forms are regarded as having distinct and individual features. They are not considered as merely differing in degree. A patient who has had an attack of follicular tonsillitis will probably suffer from subsequent attacks. But when suppuration has taken place and the abscess has formed and healed, a second attack is not common.

The author continues the discussion of the follicular form. It occurs under two opposite climatic conditions, one of winter and one of summer. The first is when the air has been saturated with moisture for several days in succession, developing a fog; with a gentle east wind. The second is when there have been successive hot and dry days, with the humidity about 80. These are the atmospheric conditions that favor rheumatism.

Rheumatism and tonsillitis are both liable to occur under septic influences. Rheumatism, quite as frequently as tonsillitis, may appear in connection with drain poisoning. This has been proved by the analysis of the medical list of a large institution, where, previous to repairing the drainage, the throat and acute rheumatic patients made 25 per cent. of the cases. In the year subsequent to the change the two diseases constituted 6 per cent. of the list.

The author found that, in an analysis of 119 cases of tonsillitis, 38 of the cases had been subject to repeated attacks of rheumatism; 28 suffered from rheumatism during the attack; in 10 cases the patients were rheumatic; the remaining cases gave negative information.

In both tonsillitis and rheumatism there is a tendency for the disease to recur; both are marked by perspiration during the attack; in both there is a liability of endocardium and pericardium becoming inflamed. The author believes that many cases of so-called *febricula* in children are follicular tonsillitis. There may have been no prominent throat symptoms and the throat examination was not made.

The author believes that the cause of many cases of cardiac valvular disease may be found in follicular tonsillitis.

The tendency of the fever of follicular tonsillitis is to subside on the third day.

The author concludes by advancing three theories. 1. Rheumatism is a general disease, which frequently manifests itself in the throat; 2. The inflamed tonsil is the receptacle for the rheumatic poison, and its mode of entrance into the body; 3. The specific germ after entrance into the body causes inflammation of the tonsils, the fibrous, and the fibro-serous membranes.

GLYCOSURIA.

Ord (Lond. Med. Soc., Oct. 1889) presented a paper concerning certain conditions in which sugar is found in the urine and in which the disease diabetes is not present.

An organic condition quite commonly present is an excessive afflux of blood to the liver and other glycogenic organs. A vasomotor paralysis resulting from central or peripheral causes will produce this. Hepatic irritation, direct or indirect, from the condition of neighboring organs, causing dilatation of the hepatic artery, is regarded as a factor.

A new and interesting theory under the name of *compensatory hyperæmia* is advanced. The author believes that, by this means, arterial obstruction elsewhere may be balanced. The constant use of the term *arterial* is noticed in this part of the paper. It is considered that any great contraction of arteries in parts, near to or remote from the liver, may produce an extra amount of blood pressure in the arteries of the liver and so set up glycosuria.

Heredity is traced as a factor in causation. In the cases recorded the parents were well advanced in years; some were the subjects of diabetes and others of glycosuria. The glycosuric children of these parents were over fifty.

Attention is drawn to the relation between gout and glycosuria. Glycosuria is often found as a symptom of gout, and the diathesis is the probable cause of the sugar in the urine.

Glycosuria is frequently found in people subjected to great nervous strain. If none of the conditions mentioned above is found we must look for an ætiological factor in *tissue imperfection*.

TISSUE IMPERFECTION.

This condition in the body may be marked by

1. Abnormal tissues,
2. Abnormal constitutional states.

Cases illustrative of this may be found in stout people suffering from glycosuria. These people may have an increase of weight by inheritance, or due to habits, as from lack of exercise or alcoholic

indulgence. The glycosuria here results from imperfect nutrition. In many of these cases some hepatic change, increase or decrease in size, may be found. In others cardiac valvular disease may be detected. Some irregularity in arterial tension is generally present in these cases. Some cases of granular kidney are associated with glycosuria. Tertiary syphilis is also frequently found as a cause. Again, in tissue imperfection the storing of sugar in the muscles must be considered, and the author considers it highly probable that muscular degeneration, in and of itself, may result in glycosuria. Several interesting cases are recorded where glycosuria was found in patients suffering from angina pectoris. In his remarks on this disease the author has failed to associate arterial change with muscular degeneration.

Six instances are given where the sudden stopping of the secretion of milk was followed by a temporary glycosuria, being due to the backward flow into the vessels of a large quantity of lactose.

No definition of glycosuria is given, but it is evidently regarded as a condition and not a disease. The author concludes by saying that as albuminuria is not conclusive evidence of Bright's, so glycosuria should not be regarded as always indicating diabetes.

LACTOSE AS A DIURETIC.

Germain Sée (*Semaine Medicale*) makes the statement that lactose is a powerful diuretic, increasing the watery flow to an enormous amount. It is recommended by him in dropsical conditions. Only the uncomplicated dropsy of cardiac disease can be successfully treated by lactose. Its action is not so certain where the kidneys are involved. Diarrhœa or perspiration, if excessive, will modify its action. Its use may be continued for eight or ten days. The author asserts that one hundred grammes of lactose will produce enormous diuresis; and will not cause the appearance of sugar in the urine. Milk alone is a diuretic, but it causes a glycosuria. The theory as to the action of lactose is a strange one, and if it be true does not bear out the relation of cause and effect. It is to be used only in dropsies of cardiac origin, and it acts not by increasing blood pressure, but by having a direct action on the renal secreting elements.

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

THE EASY DETECTION OF ADULTERATED BUTTER.

P. Bockairy, in the *Bull. de Soc. Chem.*, 1888, p. 249, describes an easy way of detecting foreign fats in butter. The results are said to be

very satisfactory, and the presence of foreign fats can easily be stated to within ten per cent.

The process is as follows: 15 c. c. (fl. 3 ss.) of toluol (or benzole) are put into a test-tube, and 15 c. c. of the butter to be examined are added, taking care to melt and filter, or melt and thoroughly settle it beforehand so as to get rid of salt, water, etc. 40 c. c. (fl. 3 xj) of ninety-five per cent. alcohol are now added. At the temperature of 18° C. (64.4° F.) the toluol in which the fat is dissolved will be found in a clear layer at the bottom, while the alcohol forms a layer above. Warm the tube to 50° C. (122° F.) by immersing it in warm water, and shake to mix the two layers. Foreign fats immediately produce a turbidity, whereas if the butter be genuine there is no turbidity.

To ascertain whether the butter is pure, it is sufficient to keep it for half an hour at about a temperature of 40° C. (104° F.), after having shaken it well. If the butter is pure, no turbidity, or scarcely any, will be perceived, whereas, when foreign fats are present, there is at first a turbidity, followed by a separation of the liquids. Samples which show a precipitate of about 2 to 3 c. c. in volume are probably adulterated. This is certainly the case when the precipitate is more than 2 to 3 c. c. or more than one-half drachm.

THE DISINFECTION OF FÆCES.

Dr. C. J. Foote, of Yale Medical School, has recently published (*Am. Jour. of the Med. Sci.*, Oct., 1889) the results of his experimental studies in the sterilizing of fæces.

The object of the experiments was to determine the value of corrosive sublimate as a disinfectant for fæces, and also the value of other disinfectants. The method employed was to mix the fæces with a solution of the disinfectant of definite strength, and after a definite duration of contact, to inoculate culture media with the mixture. The conclusions drawn from the experiments were as follows: The best disinfectants to use are the bichloride of mercury with hydrochloric acid, bichloride with potassium permanganate, and chloride of lime.

Corrosive sublimate alone, even in two-tenths per cent. solution, is unreliable when even as much as a pint to every one hundred cubic centimetres (3 $\frac{1}{3}$ oz.) of dejection is used. Five per cent. solutions of carbolic acid are unreliable.

The author emphasizes the necessity of thoroughly stirring the fæces with the disinfectant, so as to disintegrate every part of them, and the necessity of allowing the mixture to stand at least four hours before emptying.

For long-continued use, where the dejections are to be thrown into a water-closet, chloride of lime is the most available disinfectant. Solutions of chloride of lime lose their efficacy after a week, and

should be kept in tightly corked bottles. A freshly made solution is the best.

LIME AS A DISINFECTANT FOR FÆCES.

In 1887, Dr. Liborius, of Kronstadt, Russia, communicated to the "*Zeitschrift f. Hygiene*" a paper on the above subject. He reached the conclusion that an aqueous solution of caustic lime, of the strength of 0.0074 per cent. of lime, suffices, in a few hours, to permanently destroy the typhoid bacillus, and 0.0246 per cent. kills the cholera bacillus.

Cholera bouillon-cultures, containing an abundance of fragments of coagulated albumen, were completely disinfected by the action of 0.4 per cent. of pure caustic lime in fragments. Under these unfavorable conditions, the most effective form of the lime was pulverized caustic lime, or a 20 per cent. milk of lime.

In 1888, in the same journal, Dr. Kitasato, of Tokio, Japan, gave the results of experiments in the same direction, performed by him upon the typhoid and cholera bacilli. He states that he found the addition of 0.18 per cent. of lime destroyed the typhoid bacillus in neutral bouillon-cultures. He concludes that caustic lime is a very suitable disinfectant for typhoid and cholera bacilli, as it is cheap and to be found everywhere.

In 1889, in the same journal, Dr. Pfuhl, of Berlin, published the results of his experiments to determine the best form of lime to use in the disinfection of typhoid and cholera stools. He found lime in lumps too slow in its action. He then prepared a milk of lime by slaking fresh lime in four parts of water. This 20 per cent. milk of lime, when added in the proportion of 2 per cent. to typhoid and cholera stools, disinfected them completely.

He recommends the addition of enough of the milk to render the mixture decidedly alkaline to test papers.

In the "*Revue D'Hygiene*" for 1889, Drs. Richard and Chantemesse publish their results in repeating the experiments of Pfuhl. They confirm his results that 2 per cent. of the 20 per cent. milk of lime was sufficient to disinfect typhoid, cholera or dysenteric stools. It would appear, then, from these experiments that milk of lime is a valuable disinfectant for typhoid stools, and Richard and Chantemesse, in comparing its action with that of corrosive sublimate and chloride of lime, found it much more effective than the former, and more so than even the latter.

Fresh unslaked lime must be used in preparing the milk of lime, and it must be freshly prepared or kept in tightly stoppered bottles. It may thus be kept two or three days without losing its efficacy.—
"Sanitary Inspector," Aug., 1889.

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Lecturer on Histology and Pathological Anatomy, Long Island College Hospital;
Associate Director of the Department of Histology and Pathology, Hoagland Laboratory;
Pathologist to the Brooklyn Throat and Nose Hospital.

ÆTIOLOGY, MODE OF ORIGIN, AND FORMS OF ACUTE PERITONITIS.

Pawlowsky (Virch. Archiv, cxvii., p. 469), after critically examining the investigations of von Wegener, Grawitz, and Mikulicz, conducted a series of 110 experiments in 13 series. These he divided into four principal groups, as follows:

1. The action on the peritonæum of various chemical substances: (*a*) ol. crotonis, (*b*) the digestive ferment trypsin, (*c*) the chemical products of staphylococcus aureus and streptococcus erysipelatis. In no case did he induce suppuration; either no serious effect was produced, or the animals had hæmorrhagic peritonitis.

2. The action on the peritonæum of various microbes: (*d*) non-pathogenic, a staphylococcus somewhat resembling *S. aureus*, and yellow sarcina: these alone and in combination with chemical substances did not induce purulent peritonitis; (*e*) pathogenic, staphylococcus aureus, bacillus pyocaneus induced fatal purulent peritonitis regularly, the animals only surviving inoculations with exceedingly small quantities of the germs. The purulence of the inflammation was always in direct ratio to the length of the animal's life after the inoculation. In cases running a very short course scarcely any changes in the peritonæum could be noticed; only microscopically was the peritonæum seen thickly covered with microbes, which also had invaded the superficial lymph-channels. P. here remarks the resemblance of the autopsy-findings to those of patients dead of "shock after laparotomy," perforation, etc.

3. Action of the intestinal contents on the peritonæum: deadly when injected unfiltered, harmless when injected after filtration, deadly after six days' sterilization by Tyndall's method.

4. Mixed action of microbes and chemicals on the peritonæum: (*f*) a bouillon-culture of a pilz which is fatal to rabbits, which had been obtained pure on agar-agar, induced fatal fibrino-purulent peritonitis. Finally (*g*) staphylococcus aureus in quantity which had alone proved harmless with agar-agar, croton-oil, or trypsin, always proved fatal, and nearly always produced swelling of the spleen and commonly pleuritic effusion. The author believes his experiments indicate, as their practical outcome, the necessity for laparotomy at the earliest possible moment in these cases.

ÆTIOLOGY OF PERNICIOUS ANÆMIA.

F. Müller (*Charité-Annalen*, xiv., 1889, p. 253) publishes four grave cases of pernicious anæmia, in which examination of the blood showed very significant reduction in the number of red blood-corpuscles (as low as a half million to the c.mm.), while the lessening in amount of hæmoglobin was not proportionally great, so that the corpuscles were all more highly colored than normal. Further, under poikilocytosis and microcytosis, the appearance of unusually large nucleated red blood-corpuscles (megoblasts and gigantoblasts), and no increase of white corpuscles. Fever and capillary hæmorrhages were also noted in these cases. In the first case was found, as in the cases of Reyher, Runeberg, and Schapino, *botriocephalus balticus*, the expulsion of which, however, came too late to be connected with the eventual consequences.

The other three cases presented undoubted constitutional syphilis, and the author concludes that syphilis may occasionally lead to pernicious anæmia.

TWO FORMS OF AORTIC INSUFFICIENCY.

Hampeln (*Petersburger med. Wochenschr.*, 1889, No. 20) observes the necessity for distinguishing two forms of aortic insufficiency—

1. Primary, following endocarditis.
2. Secondary, occasioned by arteriosclerosis.

The importance of making the two distinct relates to the prognosis which in the first case is favorable, in the second unfavorable, namely, when associated with syphilis or alcoholismus. The differential diagnosis, according to H., is not difficult.

URÆMIA, CEREBRAL ŒDEMA, AND ARTERIOSCLEROSIS IN AN EIGHT-YEAR-OLD CHILD.

Girode (*Rev. mens. d. malad. de l'enfance*, 1889, Juin) reports the case of an eight-year-old child, hitherto in good health, who caught cold and was seized with headache, vertigo, colic, and cramps, followed in a few hours by coma, trismus, opisthotonos, tonic spasms, irresponsive pupils, marked salivation, irregular respiration, pulse 66, temperature 41.2° C. Death in twelve hours. The autopsy revealed advanced hypertrophy of left ventricle, mitral valve normal, chronic endocarditis of left ventricle, slight atheroma of aorta at its commencement, nephritis, marked albuminuria, serous intra-meningeal effusion, *œdema cerebri*.

Microscopically the kidneys showed recent widespread degeneration of the parenchymatous cells in the convoluted tubules, with exudation into the glomeruli, and chronic changes in the same. The renal vessels and those of the thickened endocardium are in the early stages of arterial sclerosis.

The only cause for these changes that the author could discover was over-use of alcohol, and in support of this he cites a case of similar nature in a child of fifteen, with an "exquisite" chronic alcoholismus.

A NEW COLORING FOR AMYLOID.

E. Burchardt (Virch. Archiv, Bd. 117, 1889) by a new process colors only the amyloid material. It is only applicable to hardened sections, which are immersed in a medium strong anilin-water-gentian-violet solution until darkly colored—one to a few moments sufficing. They are next placed in a solution of one drop of concentrated muriatic acid in ten grms. water. In ten minutes everything but the amyloid is completely decolorized, after which sections are washed in water, and examined in liq. potassii acetatis. The amyloid is colored red-blue.

The colloid matter of the thyroid gland takes the same color, but does not retain it as persistently.

Over-coloring is to be avoided.

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital; Curator and Microscopist, New York Eye and Ear Infirmary.

COMPOSITION OF HUMAN LENS.

Collins (Ophthal. Review, Nov. 1889) has examined six clear and ten cataractous lenses in reference to their weight and the amount of total solids, water and ash. His results lead to conclusions somewhat different from the opinions ordinarily held. In the clear lenses he found that there appeared to be a regular increase in weight with the age of the subject, his results thus confirming those of Priestly Smith, and that the percentage of water (about 70 per cent.) and therefore of solids in such clear lenses was remarkably constant, whatever the age. The amount of ash was also constant. In the cataractous lenses the total weight was less than in the clear, and seemed rather to diminish with age. In these lenses the relative proportion of water and solids varied considerably, but on an average the water was diminished (65 per cent.) In both clear and cataractous lenses the proportion of water to solids seemed to depend upon individual peculiarities rather than age changes, and a lens does not necessarily become denser as it grows older. In cataracts, however, the law of continuous lens growth does not hold, but rather shows a tendency to inversion. The ash of cataractous and clear lenses was absolutely about the same, but relatively the former showed an excess of about 50 per cent. From these

results the author concludes that "a cataract is not likely to be more solid because the lens in which the change has occurred is an old one, and any treatment based on such a supposition is fallacious and unsound." We must be guided in deciding as to operation on immature cataracts by the circumstances of the individual case.

DEGENERATION OF CENTRE OF RETINA IN THE AGED.

Hirschberg (*Centralbl. f. p. Aug.*, Sept. 1889) describes the symptoms and changes in the fundus met with in otherwise healthy old people, changes known in England as "Tay's Choroiditis." The symptoms are a gradual loss of finer central vision, so that reading becomes difficult or impossible, whereas the patients find no difficulty in going about. Both eyes are affected, the centre of the fundus showing with the ophthalmoscope circumscribed light discolorations in which in certain cases a crystal formation may be recognized. In the neighborhood fresher grayish-blue spots are visible lying behind the retinal vessels, and there may be some patches of increased pigmentation. Under the microscope one sees irregular thickenings and concretions of the vitreous lamella of the choroid, the so-called "drusen." The changes are not limited to the centre of the fundus, though here more easily recognized and more disturbing to the patient. The course of the disease is progressive, and treatment without avail; blindness, however, does not ensue. Very rarely one sees a similar degeneration in diabetes or albuminuria.

FATAL RESULT OF IODINE INJECTION FOR RETINAL SEPARATION.

Gelpke (*Centralbl. f. p. Augen.*, Sept. 1889) reports a case in which following Schoeler's method, he injected with all antiseptic precautions three drops of iodine tincture into the eye of a healthy man in whom quite extensive retinal separation had occurred without known cause. This was followed by purulent choroiditis and acute meningitis, which proved fatal six days after the operation. The source of infection and the channel by which the brain became involved are not further stated, and we look with interest for the results of the microscopical examination of the enucleated eye and orbital tissues.

INFLUENCE OF CORTICAL LESIONS UPON VISION.

Lannegrace (*Arch. de Med. exper. et d'anat. pathol.*, 1889, p. 87), as a result of numerous experiments made on animals to determine the effect of cortical lesions upon vision, the injuries being inflicted with the thermo-cautery, comes to the following conclusions. Disturbances of vision follow lesions not only of the occipital but also of the frontal, temporal and parietal regions. They are, however, not constant and sometimes difficult to establish. Their severity after apparently similar injuries is very variable, and depends upon the location as well as the

extent of the traumatism ; is however, much greater after a repetition of the injury. After a single application of the cautery the visual disturbances are regularly of a temporary character, lasting from a few days to several weeks. Repeated unilateral injuries cause more severe and lasting, and sometimes even permanent disturbance. Different areas of the same hemisphere appear therefore to act vicariously for each other. After recovery from injury of one side, injury of the other may cause beside its own special effects a return of the first symptoms, indeed even make them permanent. Very extended bilateral injuries cause temporary not permanent blindness.

The visual disturbance is very variable in its nature, sometimes homonymous hemiopia, sometimes crossed amblyopia, the former being occasionally pure, the latter almost never so, but usually associated with a certain degree of hemiopia. The nature of the disturbance depends on the location of the injury. Lesion of any portion of the cortex may cause homonymous hemiopia, while lesions of the anterior regions are associated with crossed amblyopia. The perception of retinal impressions may be completely but not permanently abolished by cortical injuries. After such injuries impressions on the centre of the retina seem best perceived. This is no exclusive correspondence of one portion of the retina to one region of the cortex. Cortical lesions never cause paralysis of the internal or external ocular muscles. Injuries of the anterior portion of the cortex may cause diminished sensibility of the eye on the opposite side with accompanying amblyopia. Lesions of the frontal and parietal regions may cause trophic disturbances of the opposite side of the body and also of the eye. Lannegrace concludes that the area of cortex injury of which is followed by visual disturbance, must therefore be of considerable extent, including almost the entire convexity of the brain. A limited visual centre in the occipital region (Munk) does not exist.

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital;
Assistant Physician, Brooklyn Throat and Nose Hospital.

TREATMENT OF PHTHISIS OF LARYNX.

Sedziak (*Jour. Laryngol. and Rhinol.* vol. iii., No. 6). Cocaine is the most valuable drug as an anæsthetic and analgesic in the treatment of laryngeal tuberculosis. In severe cases, solutions of fifteen to twenty-five per cent. are admissible, Period of anæsthesia lasts about twenty minutes, commencing in four minutes after applying with brush.

Piniaczek of Cracow, Heryng and Fränkel first introduced injections of ten per cent. solution into sub mucous tissues of larynx. These applications are made in posterior part of larynx, the needle piercing to depth of half centimetre. The anæsthesia extends to mucous membrane of throat, uvula and soft palate, and lasts four hours, beginning a few minutes after injection. The merits of this method are: 1. Limitations of this method to certain regions and spontaneous graduation. 2. Anæsthesia lasts longer. 3. In ulcerations of œsophageal surface of posterior part of larynx, injection gives relief from pain where brushing is useless.

A solution of carbolic acid, two per cent. being added to cocaine, the intoxication is avoided.

In 1885, Krause first advocated local applications of lactic acid. Schrötter says, "Hitherto I have not known another remedy with which I had succeeded in obtaining so many amendments and such a relatively large number of cures."

Of thirty-four cases, the author reports favorable results in twenty-five from the use of this drug. Where slight or interstitial changes exist in the lungs, where there is a natural tendency to the production of connective tissue,—a conservative process obstructive to the vital energy of pathological micro-organisms—here local treatment by lactic acid does much good in assisting and hastening cicatrization of ulcers in the larynx.

The acid may be applied by brush, at first in weak solutions of ten per cent., which should be increased to seventy-five or one hundred per cent. It acts energetically upon pathological tissues, but has slight effect upon sound tissues, causing in strong solutions a burning sensation and irritation of mucous membrane, without, however, disintegration of epithelium.

The action of lactic acid upon tubercular-degenerated tissues is seen in diminution of infiltration, clearing of ulceration, formation of sound granulations, and finally, cicatrization. Ulcers situated in posterior part of larynx are most resistant to effect of lactic acid; the best results were obtained where ventricular bands were involved. Upon plastic infiltrations, the acid acts slowly, scarification being first necessary, after which the acid should be rubbed in. Parenchymatous injections of lactic acid in twenty per cent. solution to the amount of three to five drops is strongly recommended; the operation is almost painless, the swellings disappear in about three weeks, followed by healing of the ulcers. Almost always this drug diminishes or causes cessation of difficult and painful swallowing. The galvano-cautery has a favorable influence upon absorption of tubercular infiltrations and also produces cicatrization of tubercular ulcers.

Inflammatory symptoms, including acute œdema is urged by many

as an objection to use of cautery, but the author has not had this experience. One of the most important advances of recent times in therapeutics of laryngeal tuberculosis is the surgical method, including endo-laryngeal incisions (scarifications) and curettement (scraping). For the first method, those forms of laryngeal tuberculosis are most suitable, in which, besides relatively small change in the lungs and the absence of fever, the changes in the posterior region of the larynx were of œdematous character, in which the epiglottis was thickened and swollen, and there was great dysphagia, which diminished very much, or disappeared entirely after making incisions. As rapid agglutination of cut edges of sore follows, deep incisions should be made, especially in perichondritis arytenoidea.

The second method, scraping, is advocated in cases of ulcers with sclerotic ground and hypertrophic edges; the merits of this procedure are complete destruction of tubercular process, the small inflammatory reaction after the operation and speedy decrease of difficulty in deglutition.

In summing up, the author concludes:

1. Primary laryngeal tuberculosis exists, although rare, and is curable.
2. From the combined method, lactic acid and galvano-cautery, or surgical treatment, we can expect the best results in treating laryngeal tuberculosis.

RELATION OF TONSILLITIS TO RHEUMATISM.

C. W. Haig-Brown (*Brit. Med. Jour.* Sept. 14, 1889). Tonsillitis and rheumatism both are most frequent in prolonged wet weather, they also show persistent aptitude to recur. The febrile period of the two diseases are accompanied by foul-smelling perspirations and pains in limbs, which are quite apart from inflammation of joints, and are due to inflammation of fibrous element of inter-muscular fasciæ. In rheumatism, the ends and pericardium are liable to become inflamed; also in tonsillitis, cardiac murmurs of more than transitory importance are at times developed, accompanied by increase of fever, and followed by hypertrophy of myocardium. It is inferred that the inflamed tonsil is the receptacle for the rheumatic poison and the medium for its conduction into the general circulation, or that the specific germs evidence their existence in inflammation of tonsils and the fibrous and fibro-serous membranes. In 119 cases of tonsillitis, 76 or 63.9 per cent. gave histories of possible rheumatic origin. R. Hingston Fox on the same subject says: In acute rheumatism the tonsils are often inflamed, most commonly early in the attack; also acute arthritic symptoms are frequent in connection with the various forms of tonsillitis. Scarlatina, diphtheria, enteric fever, acute rheumatism and tonsillitis are

allied diseases, and might be styled the "Lympho-rheumatic" group. They have the following features in common: acute lesions of the tonsils or of other lymphatic organs of the digestive tract, arthritis, inflammation of endocardium and pericardium and serous cavities. Heart disturbance is common, even in simple tonsillitis. The second sound is markedly accentuated in second and third inter-chondral spaces on left side, and both sounds are generally reduplicated. The association between diseases of lympho-rheumatic group is further shown by the facts that often one individual is attacked at different times by two or more of the diseases named, whilst others appear to enjoy an immunity from the entire group.

INDISCRIMINATE USE OF COCAINE.

H. Holbrook Curtis, (N. Y. Med. Jour. Dec. 29, '89). The reaction against cocaine has assumed definite proportions. Continued small doses of this drug, such as might be prescribed for acute coryza, have in numerous well authenticated cases, produced nasal stenosis from permanent dilatation of erectile plexus due to paresis of vaso-motor system. In this condition the nasal mucous membrane becomes dull gray in color and presents an œdematous appearance, or it might on the other hand, retain its normal color, but become tumefied, no longer contracting even upon application of cocaine crystals, suggesting a transition to true hypertrophy by increase of connective tissue elements at expense of vascular. The relief felt from oppression of congestal turbinated bodies after application of this drug, is due not only to contraction of tissue but also to general exhilaration of spirits from mild cocaine intoxication. The indiscriminate use of cocaine has introduced a condition known as the cocaine heart, the symptoms of which were a feeling of fulness in the præcordial region on rising in the morning, flashes of pain, followed by palpitation and enfeebled action, the result of enervation of the sympathetic nervous system. Besides the cardiac complication were observed great restlessness and increasing prostration, patient showing great mental dejection. Dr. H. Koller, the discoverer of the anæsthetic properties of cocaine, never gives it into the hands of patients; also, he does not use it in the nostrils in greater strength than five per cent. solution. By giving time he could produce as useful results as with a twenty-five per cent. solution. In making subcutaneous injections, a discrimination must be made between strength of solution used in the limbs and in other parts of the body, the latter calling for the weaker solution, for the avoidance of intoxicating effects. For making plastic or skin operations he never uses a solution stronger than two per cent.

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

FURNISHING PURE STERILIZED MILK TO THE PUBLIC.

(“Med. and Surg. Reporter,” Jan. 4, 1890.) “A woman in New Hampshire has undertaken a milk-farm, not merely to give the usual canned or glass supply for exacting customers, but to furnish sterilized milk. The farm is in the pine region of New Hampshire, and the herd has a physician. The milk is sterilized and hermetically sealed in six-ounce bottles, which is a sufficient quantity for a child to take at one feeding. The heat of the water-bath, which is used to destroy any possible disease- or fermentation-germs in the milk, is applied as immediately as possible after the milk is drawn from the cow.”

PHYSICAL TRAINING IN PUBLIC SCHOOLS.

(“Fourth Annual Report of the Board of Health of Maine.”) “In a paper by Dr F. N. Whittier is cited an experiment made by Dr. H. D. Wey at the New York State Reformatory at Elmira. The doctor took twelve of the dullest boys in the school, gave them a thorough course in physical training, the boys not knowing the object of it. Their average rank in their studies for the five months immediately preceding the experiment was about forty-five per cent., while during the five months’ course in physical training their average was seventy-four per cent, and, what is still better, they maintained their advanced standard during the six months following the discontinuance of the course, thus showing that the effect was permanent. Dr. Wey says: ‘With physical culture and improvement there came a mental awakening, a cerebral activity never before manifested in their prison life. Their faces parted with the dull and stolid look they had in the beginning, assuming a more intelligent expression, while the eye gained a brightness and clearness that before was conspicuous by its absence.’”

THE HEADACHES OF GROWING CHILDREN.

(“The Medical Age,” Dec. 26, 1889) Prof. Auguste Olliver, of Paris, in a clinical lecture, doubts that there are “headaches of growth properly so called,” and believes that ‘the headache of growing children is a near relation to nightly terrors, false chorea, and certain nervous coughs, that it is, in a word, an hysterical manifestation. If we succeed in demonstrating that cephalalgia is frequent in hysteria and that the latter is not rare in childhood, that by its characters, its onset, its march, the headache which we have observed resembles that which we meet with in many adult hysterics, we shall come near giving the proof of what I have just advanced. If we believe in a headache of growing children, we flounder among such questions as these: Will

the child continue to suffer from headache when the growing period is over? If the little patient be a girl, will she be rid of her headaches when the menses appear? If the patient be a boy, will these headaches cease about the time of puberty? Is not the headache one of the elements of a malady which will manifest itself at the adult age under a graver aspect?

"From the age of ten to fifteen children have headache oftener than at any other period of life, and it is a consequence of numerous causes which it is possible to remedy or suppress. If we recall the cases which we have observed at the polyclinic, and which have been called the headaches of growth, we shall see that generally after the examination we give another name to the headache and treated it according to our more precise diagnosis, and generally with success.

"A girl of thirteen years, well developed, large for her age, came to our clinic. For months she had had an almost continuous frontal headache. It was the headache of growing time, people said. But she was pale, emaciated, and had a soft systolic murmur at the base of the heart. She was anæmic, had worked hard on a meagre diet. In a month the headache disappeared, after she had been put on a good diet and had wine, quinine, and iron.

"A boy of twelve years was working hard to pass his primary examination, and suffered from an almost continuous headache, which at times made him desist from study. When a book was placed in his hands he knit his eyebrows in a very comical position and made muscular efforts in order to be able to continue reading. It was found that he had a degree of hypermetropia rare at his age. The cephalalgia was a simple phenomenon of asthenopia, and was cured by the use of convex glasses.

"A girl of twelve years complained of a sensation as though her temples were hoop-bound. The child's mother had had attacks of convulsive hysteria, and the father was very nervous. The child was intelligent, but very impressible. I made her quit study, gave bromide and cold douches and sent her to the country. At the end of two months she was cured.

"A boy of seven years, tall, thin, animated, belongs to a family in which there exists no diathetic effect apart from neuropathy. Parents and grandparents have been subject to nervous ailments. He had a scroto-femoral erythema with the eruption of each tooth; has had small-pox, measles, and incontinence of urine till the age of three years. Sleep always disturbed and paroxysmal headache ever since three and a half years; is nervous. The right half of his face is less developed than the left; the palatine arch is out of shape, and the occipital protuberance very prominent."

GYNÆCOLOGY.

BY A. H. BUCKMASTER, M. D.,

Gynæcologist to the Hospital for Mental and Nervous Diseases; Assistant Surgeon to St. Peter's Hospital, Brooklyn.

At a recent discussion of the British Gynæcological Society, Lawson Tait mentions cases in proof of the statement that pyosalpinx and peritonitis can exist without increase of temperature. "Over and over again he had seen this (suppuration) occur in the tubes and broad ligament without any rise of temperature. Dr. Fenwick suggested that the explanation was that the pus was loose, so to speak, in the peritoneal cavity, and that a rise of temperature was associated with tension. He instanced occasions where he opened hard masses in the pelvis in cases with a temperature of 105° with frequent rigors and had found only serum.

Dr. Bedford Fenwick mentioned cases where one side of the plural cavity had been distended with pus, and yet there was no marked rise in temperature.

Dr. Bantock, in a report of 238 cases of ovariectomy, speaks of Dr. Polaillon's case, where death was supposed to have resulted from flushing the peritoneal cavity, and of which an abstract has already appeared in this Journal, No. 11.

"In a recent number of *Annales de Gynécologie* (September), Dr. Pierre Delbet has published an interesting series of researches on this subject. With regard to his conclusion, that, because foreign matter cannot all be removed from the peritonæum by flushing, it is best to employ an antiseptic solution, I shall only say that experience does not bear him out. His experiments tend to show that the temperature of the water within the limits of 65° to 122° F. has no appreciable effect on the respiration or circulation, but that a low temperature by its chilling effect increases shock. He is of the opinion that in Dr. Polaillon's case the carbolic acid or the anæsthetic may have had the principal share in the fatal result, thus absolving the mere act of flushing, and he doubts the alleged hæmostatic action of very hot water. He points out that during the first minutes a great quantity of water is absorbed, and that when salt, in the proportion of seven parts to one thousand of water is used, the process becomes "a true, indirect transfusion." It is probable that with the water alone the same result would be obtained. Hence, we can imagine that this process might be of service in lessening the shock due to loss of blood, the suggestion of which is claimed by Dr. Gill Wylie. One important fact which is brought out in Dr. Delbet's experiments is this: that after flushing the peritonæum for ten minutes with the saline solution, a poisonous fluid

may be diffused over the peritonæum with impunity, provided that it be followed by another flushing with the saline water. Dr. Bantock adds that he had washed out the peritonæum in more than half his last hundred cases, and in many of these, the abdomen was completely filled, without harm. He objects to the use of mercury and carbolic acid for this purpose.

CREOLIN IN GYNÆCOLOGY.

(Chéron, *el Prog. Gen.*, May 10, 1889). Extensive experiments have been made by the author with this substance in 2 per cent. and 5 per cent. solutions. Gonorrhœal vaginitis was quickly improved by irrigation of the vagina and vulva with the stronger solution. In purulent cervical endometritis the diseased tissues were first carefully cleansed with absorbent cotton, after which the creolin was applied, and a few applications were followed by cessation of the suppuration. Creolin gauze was found to be an excellent substitute for iodoform gauze in cases of suppurative and hæmorrhagic endometritis where a tampon was required.—*Annals of Gyn.*, Dec., 1889 [The writer can bear witness to the efficacy of this agent in the conditions mentioned.]

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

As a guide to those interested in Dermatology generally, and to those interested in the necessarily very brief reviews given in the Journal, we have thought it expedient to give a short glossary of the domestic and foreign journals devoted to this work. It will be indeed a very exceptional event to find anything pertaining to Dermatology not noted in one of the following journals, viz.:

1. The Journal of Cutaneous and Genito-Urinary Diseases. Editors, Drs. P. A. Morrow and John A. Fordyce, New York.
2. The British Journal of Dermatology. Editors, Malcolm Morris, London; H. G. Brooke, Manchester.
3. Monatshefte für Praktische Dermatologie. Editor, Dr. P. G. Unna, Hamburg, Germany.
4. Archiv. für Dermatologie und Syphilis. Editor, Prof. F. J. Pick, Prague, Bohemia.
5. Annales de Dermatologie et Syphilographie. Editors, Dr. Ernest Besnier, A. Fournier, A. Doyon and P. Horteloup, Paris, France.
6. Gazette des Hôpitaux, Paris.

These journals may be all found in the Journal Room, 3d floor of the Academy of Medicine, New York, and nowhere else in the two cities, as far as I can find out.

A CONTRIBUTION TO THE STUDY OF THE QUESTION OF PIGMENT FORMATION IN
THE SKIN OF THE NEGRO.

Dr. Morrison, Baltimore (in *Monatshft. f. P. D.*, Vol. IX, No. 11). This interesting paper was read at the Paris Congress in September last, and bears on the question as to whether the negro foetus, or newly born infant's skin, contains more pigment than that of the white. The author insists that this is the case, and gives clinical and microscopical facts from personal observation to prove his case. It has been generally accepted hitherto, that the pigment deposit was an after-occurrence, as, of course, it is in a major degree; this last fact is naturally accepted by the writer of the paper.

ON SEBORRHEAL ECZEMA AND ITS RELATION TO OTHER SKIN ANOMALIES.

Dr. H. G Brooke, Manchester, Eng. (*Monatshft. f. P. D.*, Vol. IX, Part 12). The doctor in this compliments Unna highly for his studies concerning the above-named class of skin affections, and points out his reasons for his belief in its etiological connections with various diathetic conditions, chief among which may be named the lithic acid diathesis.

RESULTS OF BACTERIOLOGICAL EXAMINATIONS AND STUDIES, IN THE CHRYSAROBIN TREATMENT OF TRICHOPHYTOSIS. (HERPES TONSURANS).

Dr. V. Sehlen, Hamburg (*Monatshft. f. P. D.*, Vol. IX, Part 12, p. 547), gives the result of his experiences of the cultivation of the trichophyton, and his experiments with parasitocides, for cryptogamic growths. Recommends chrysarobin greatly from this standpoint.

ON THE LICHEN QUESTION.

Prof. M. Kaposi, Vienna (*Archiv. f. Derm. and Syph.*, 1889, Part 5, p. 743). In this article, Kaposi defends the Vienna dogma of the identity of lichen ruber and lichen planus, and does it with his usual energy. This has been before referred to in these reviews, and it will be remembered that he is totally at variance with almost all American dermatologists, and many of those of his own continent.

ON IMPETIGO HERPETIFORMIS.

Dr. Theodor du Mesnil and Herr Karl Marx (*Archiv. f. Derm. u. Syph.*, 1889, Heft 5, p. 657). The authors insist on the absolute entity of this disease, contrary to the opinions of many, and claim the conversion of Duhring, hitherto one of its most strenuous opponents, he having classed it as of the order of "Dermatitis Herpetiformis." A somewhat interesting case bearing on the subject is given by Sherwell in the *Journal of Cutaneous and Genito-Urinary Diseases* for December, 1889.

ON TATTOOED MARKS.

M. Variot (in *Annales de Derm. et Syph.*, Oct. 25, 1889, p. 847). The author gives a method which he thinks practical for removal, or

at least partial obliteration of such marks. He first applies a saturated solution of tannic acid to the part. This he pricks into skin in same way as that in which the original coloring matter is introduced; he follows this by rubbing the solid stick of nitrate of silver over the surface. He claims to have seen good results follow from the subsequent inflammatory changes and slight consequent ulceration.

BACTERIOLOGY.

BY B. MEADE BOLTON, M. D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

THE PHYSICAL EFFECT OF SEDIMENT UPON THE MICRO-ORGANISMS CONTAINED IN WATER.

Bruno Krüger (*Zeitschrift f. Hygiene*, 7 Bd., 1 Heft). In a few preliminary experiments K. substantiates the observations of Cramer, Bolton, and others, that at ordinary temperatures the bacteria greatly increase in water. This increase is not indefinite, but finally gives way to a rapid decrease. K. investigates the causes of the latter. He concludes that the bacteria disappear from water in nature on account:

1. Of exhaustion of nutrition.
2. Of freezing and thawing.
3. Of possibly the influence of direct sunlight.
4. Of sedimentation. This he regards as the most potent.

Sedimentation of the bacteria certainly takes place in many cases in water which is undisturbed; and the dead organic and inorganic particles of matter tend to carry the bacteria down with them when they settle. The latter process is greatly assisted by the addition of various heavy powdered substances to the water.

In the first place, chemically indifferent substances were tried, viz.: dry powdered clay, calcium carbonate (whiting), silicious deposits from a water-bed, aluminium oxide, pulverized slate, wood charcoal, coke, and sand. Coke and sand are specifically much heavier than the others, and the effect upon the micro-organisms less apparent. An addition of .5 grms. and 2 grms. to the litre in two separate experiments reduced the number of bacteria in the upper and middle portions of water one-half. Addition of 2 grms. of sand had the same effect, but .5 grms. of sand had no effect. It was not found necessary to make observations continued for great lengths of time, as it was found that these substances had settled in from thirty minutes to three hours. On the other hand, the silicious guhr, added in the proportion of .5 grms. per litre, decreased the number of organisms contained in the upper and middle portions of water fourteenfold in twenty hours, and

an addition of 2 grms. p. l., fiftyfold in the same length of time. The other substances behaved similarly to the guhr.

The substances act in two ways: 1st, by mechanically pressing down the organisms which lie below; 2d, by attracting the organisms. Consequently, substances which remain longest in suspension have the greatest effect. The effect is more apparent in the middle and lower portions of the water than in the upper. This would naturally be expected, as the materials added to the water have longer time to work upon the middle and lower portions.

Substances which have a chemical, as well as a mechanical, action seem to have a greater effect than the substances above mentioned. Magnesium oxide, hard wood ash, lime, and a mixture of three parts lime and one part crude aluminium sulphate were used for these experiments. Where it is desired to purify water by the addition of substances to hasten sedimentation, it is advisable, therefore, to use such substances as have at the same time a chemical action.

ÆTIOLOGY OF ACUTE CROUPOUS PNEUMONIA.

Dr. M. Jakowski (*Zeitschrift f. Hygiene*, 7 Bd., 1 Heft). J. holds that both the Friedländer's and the Fränkel-Weichselbaum's bacteria may be, under different circumstances, concerned in causing genuine pneumonia. He produced pneumonia in white mice by inoculations of both organisms; recently with the Fränkel-Weichselbaum, some time previously with the Friedländer bacterium. J. does not deny the possibility that neither of the above organisms is concerned, but thinks possibly some other not yet described may be the cause.

EXPERIMENTS ON THE EFFECT OF INFUSION OF COFFEE UPON BACTERIA.

Karl Lüderitz (*Zeitschrift f. Hygiene*, 7 Bd., 2 Heft). According to these experiments, coffee acts as a disinfectant to quite a considerable extent. Mixed with nutrient media in the proportions given below, it had the effect of preventing the growth of the organisms mentioned: 8-9 p. c. *bacillus prodigiosus*, 3 p. c. b. of typhoid fever, 2.5 p. c. b. *proteus vulgaris*, 2 p. c. *staphylococcus pyogenes aureus*, 1 p. c. *streptococcus* of erysipelas and cholera asiat., 0.6 p. c., b. anthracis. In another set of experiments, a few drops of pure cultures were mixed with 8-10 c. c. of 10 p. c. infusion of coffee, and the micro-organisms were all found to have been killed after different lengths of time, as follows: *Staph. pyog. aureus*, in 4 to 7 days; *prodigiosus*, 3 to 5 days; *prot. vulg.*, 2 to 4 days; b. of typhoid fever, 2 to 3 days; *streptococcus* of erysipelas, in 1 day; anthrax bacilli and cholera asiat., within 3 hours. Even anthrax spores were killed in 2 to 4 weeks. The antiseptic properties are not to be ascribed to the

cafein, as this substance is shown to have very weak action in this respect.

ON THE NUMBER OF BACTERIA IN THE GROUND.

John Reimers (*Ibid.*). Reimers arrives at the following conclusions :

"1. The number of bacteria in the superficial layers of the ground is not as large as many authors have stated. It is not over a few million to the cubic centimetre in this neighborhood (*Jena-Reviewer*).

"2. The numbers remain comparatively large to a certain depth, but are always smaller than on the surface.

"3. With increasing depth there then follows a rather sudden and considerable fall in the numbers, as Fränkel already demonstrated.

"4. The zone in which this sudden decrease takes place, lies between 1 and 2 metres for Jena, as well as for Berlin.

"5. The height or depth at which this zone lies seems to depend principally upon working and using the ground in question. In ground which has been worked it lies deeper than in virgin soil.

"6. Even at quite shallow depths, the ground may be found to be free from bacteria.

"7. The same sorts of bacteria grow more rapidly when found on or near the surface than when found deeper.

"8. This retardation of growth with increasing depth is also a proof that the conditions of life in the deeper layers are not so good as on the surface.

"9. At the shallow depths at which we examined the ground water, the latter showed itself sometimes free of bacteria, sometimes containing them.

"10. Whereas in one set of observations the ground water did not influence the regular decrease of bacteria, in another set the ground water layer of earth was richer in bacteria than the layer above.

"11. The number of bacteria in the ground does not seem to be materially influenced by the burial of dead bodies. Neither near to nor under the coffins was the number of bacteria greater than at a corresponding depth elsewhere.

"12. It was moreover a matter of indifference whether the earth was taken from a grave in which burial had not taken place for thirty-five years or where it had taken place one and a half years before."

PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.,

Associate Director of the Department of Physiology and Experimental Therapeutics,
Hoagland Laboratory, Brooklyn.

TWO NEW LOCAL ANÆSTHETICS.

The Comptes Rendus de la Société de Biologie (Nov. 15, 1889, p. 617) contains an article by M. E. Gley on the local anæsthetic action of ouabaïne and of strophanthine. (Action anæsthesiante locale de l'ouabaïne et de la strophanthine). These alkaloids were extracted by the methods used by Arnaud, (Comptes Rendus de l'Académie des Sciences, Vol. 106, p. 1011, and Vol. 107, p. 179). Their chemical composition was found by Arnaud to be $C_{30}H_{46}O_{12}$ for ouabaïne, and $C_{31}H_{48}O_{12}$ for strophanthine, thus differing only by CH_2 which would suggest the inference that they were adjacent members in one of the lines of derivatives of the C_nH_{2n+2} series. From their close chemical relationship, it was inferred that their physiological properties would be very much the same, and this fact was demonstrated by Gley, for their action on the heart, (Comptes Rendus de l'Académie des Sciences, Vol. 107, p. 348). Finding that ouabaïne possessed the property of inducing local anæsthesia, Gley supposed that strophanthine possessed the same properties, and undertook a series of experiments to test the efficacy of these alkaloids as local anæsthetics. Four drops of a 1 to 1000 solution of the chloride of either ouabaïne or strophanthine, when dropped into the eye of a rabbit, produced a marked diminution of sensibility at the end of five minutes, and in from eight to ten minutes the anæsthesia was complete. The cornea could be touched or even pricked without producing any reflex. This anæsthesia may remain for two or three hours. It gradually diminishes, but for an hour and a-half it remains almost absolute. At no time does the eye show signs of irritation or of inflammation. There is neither constriction nor dilatation of the vessels of the conjunctiva. The anæsthesia, however, is accompanied by a marked contraction of the pupil, which does not begin to appear until five or ten minutes after the anæsthesia is developed. The pupil continues to contract until it almost becomes a *pin point*, and then gradually begins to dilate to its normal size, always reaching this stage before the anæsthesia passes off. These alkaloids are about 12 times as strong as cocaine, and the anæsthesia which they induce is much more lasting. The fact that they do not produce vaso-motor changes gives them an advantage over cocaine in this respect. Whether they will supplant the latter alkaloid remains for the future to show.

OBSERVATIONS ON THE FUNCTIONS OF THE PROSTATE GLAND IN MAN AND
IN THE LOWER ANIMALS

This paper (by Joseph Griffiths, M. B., C. M., University of Cambridge) contains an account of some very interesting observations by the author on the relation of the prostate gland to the sexual function. His most striking observations are those made on hedgehogs, moles, and other such animals, which have a strongly developed sexual passion, that gradually increases up to a certain season, and then as gradually decreases, until it finally disappears. He divides the state of animal sexual development into three stages, the quiescent, the intermediate and the active. He finds that in the quiescent stage, the prostate is small, and the gland-cells proper form a comparatively small part of the whole; the greater part being long spindle cells, which the author believes to be connective tissue, rather than unstriped muscle.

In the intermediate stage, the gland is much larger; the gland-cells, which in the previous stage were small and cubical, have now become much larger and of columnar form. A scant secretion of mucus is found in lumina of the alveoli, and well defined non-striated muscle cells are formed in the outer alveolar sheath.

In the active stage, the prostate is many times larger than in the quiescent stage. The gland-cells proper are columnar, large and swollen. The lumen is filled with mucus and "corpuscles resembling leucocytes." Between the columnar cells, close to the basement membrane, are found scattered small round granular cells, which the author thinks have the same function as the demilune cells in the salivary glands and pancreas, viz., to replace the columnar secreting cells when these are used up. The outer coats of the alveoli have now a strong, well developed coat of unstriped muscle, capable of squeezing out the secretions which had collected in the lumina. In other words, the prostate at this time is an actively secreting gland.

The author has also studied the effect of castration on the prostate, and finds that after removal of the testicles, the gland-cells of the prostate atrophy and the connective tissue closes in on the alveoli of the gland, so that only narrow streaks of shrunken gland tissue remain to mark the once actively secreting lobules. The author has made no observations on man, but quotes several authorities who have found that the prostates of eunuchs very much diminished in size. All these observations tend to show that there is some relation between the secretion of the prostate and the sexual function. Its secretion is said to resemble that of the seminal vesicles, and, it may be, plays a more prominent part than has heretofore been ascribed to it. The enlarged prostate of old age is no exception to this, for it is the connective tissue, not the-gland cells, which proliferates.

NEW BOOKS AND BOOK NOTICES.

All books received by the JOURNAL are deposited permanently in the Library of the Medical Society of the County of Kings.

A MANUAL OF CHEMISTRY FOR THE USE OF MEDICAL STUDENTS. By Brandreth Symonds, A.M., M.D. P. Blakiston, Son & Co., Philadelphia, 1889.

This little manual is intended specially for the student, a sort of "cram-book," in which he can quickly look up salient points which may occur to him just before entering the green-room.

Those who have attended Prof. Chandler's lectures will recognize the chapters on Air and Water as familiar pictures. The principal chemical tests are grouped in a single chapter, which is a great convenience, and another short chapter is devoted to the examination of the urine, which, though very much evaporated, will be appreciated by the searcher after much information in the least possible space.

We very much doubt if such books tend to elevate the standard of medical education, on account of the tendency of the student to depend too much upon them, though if such books are necessary this is one of the best of its kind. It is hoped that in future editions the print will be improved.

A HAND-BOOK OF DERMATOLOGY FOR THE USE OF STUDENTS. By A. H. Ohmann-Dumesnil, A.M., M.D., editor "St. Louis Med. and Surg. Journal," etc. St. Louis Med. and Surg. Journal Publishing Co. St. Louis.

This little manual belongs to the same class as the preceding—in the words of the author, "not written to fill a long-felt want, but rather as a guide to students in their reading, at the request of a number of the students of the St. Louis College of Physicians and Surgeons who desired to possess a short *résumé* of the lectures."

The author has avoided details, giving nothing but general, broad principles, and left out the acute exanthemata and the syphilodermata, as they do not strictly pertain to the field of dermatology.

The little book is illustrated with 34 cuts, neatly gotten up, and of a convenient size for the pocket. It will, with the medical student, take the place of the lecture-room note-book.

THE PHYSIOLOGY OF THE DOMESTIC ANIMALS, A TEXT-BOOK FOR VETERINARY AND MEDICAL STUDENTS AND PRACTITIONERS. By Robert Meade Smith, A.M., M.D., Professor of Comparative Physiology in the University of Pennsylvania, etc. With over 400 illustrations. Philadelphia and London: T. A. Davis, publisher, 1889.

The number of text-books on physiology which have been published during the past few years is so large that one cannot but wonder that there is any demand for more. It would seem that already all possible wants in this direction had been met and abundantly supplied, and when, therefore, another appears, one is inclined to be critical and prepared to find fault, if such can be found.

Prof. Smith states that up to the present time there has been no book in the English language to which veterinary students could refer to obtain any information on the application of the laws of physiology to the functions of the domestic animals. French and German students have for a long time had the best of text-books, but the English-speaking and English-reading student has had only the notes of his professor. This statement is alone a sufficient *raison d'être* for the book before us, and we welcome it to our library.

Part I., which discusses General Physiology, we deem worthy of special commendation. The author's explanation of cellular physics and cellular chemistry is most excellent, and is as applicable to human as to comparative physiology. In Part II. Special Physiology is considered, more with reference to the domestic animals than to man.

In preparing a text-book for veterinary students the author has succeeded. It is, we think, better adapted to them than to the medical student, so-called. The only adverse criticism we have to make is as to the size of the book. A volume of 938 pages is too large for the student to read with comfort; for a book of reference this is not too much, but for a text book which a student is expected to handle for a considerable time each day, such a book is too bulky, and the chances of its being thoroughly read and studied are very much diminished.

A TEXT-BOOK OF ANIMAL PHYSIOLOGY, WITH INTRODUCTORY CHAPTERS ON GENERAL BIOLOGY AND A FULL TREATMENT OF REPRODUCTION, FOR STUDENTS OF HUMAN AND COMPARATIVE (VETERINARY) MEDICINE AND OF GENERAL BIOLOGY. By Wesley Mills, M.A., M.D., etc., Professor of Physiology in McGill University, Montreal. With over 500 illustrations. N. Y., D. Appleton & Co., 1889.

It is certainly a departure from the usual method of treating physiology to so discuss the subject as to make it adaptable both to medical and veterinary students; yet this has been the author's attempt, and in it he has been remarkably successful. This text-book supplants none which is already in existence, and, so far as we know, no other can take its place. It is decidedly original in every way, and is so full of valuable material that no teacher of physiology can afford to be without it, and all students, whatever other text-books they may possess, will find this one very useful for reference.

NOTES ON THE ELECTRO-MAGNET IN OPHTHALMOLOGY, WITH A REPORT OF NINE CASES. By Wm. Ellery Briggs, M.D., Sacramento, Cal. 8vo pphl. Reprint from *Occidental Medical Times*, August, 1889.

Dr. Briggs' conclusions are as follows:

1. The electro-magnet is generally a safer instrument for the extraction of fragments of steel from the anterior chamber, from the iris, or from the anterior portion of the lens, than the forceps
2. It is practically our only resource when the steel has penetrated the vitreous chamber.
3. It is safe to retain quite extensively injured eyes, if the offending body be promptly removed and thorough asepsis observed.

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ORIGINAL ARTICLES.

CASE OF EXCISION OF THE ELBOW JOINT.

Presented by George R. Westbrook, M.D., at a meeting of the Brooklyn Surgical Society, November 7, 1889.

J. D. M., aged thirty-four, an engraver of watch-cases, had, in the early part of August, 1887, an abscess form on his back, between his shoulders, which I opened in two places, establishing good drainage. Repair of the abscess went on satisfactorily. About the middle of September he complained of pain and swelling about the right elbow. I suspected inflammation of the joint. Exploring with a hypodermic syringe, I found pus a little above the external condyle of the humerus. A free opening was made, the pus cavity washed out with an antiseptic solution, and a drainage tube introduced; shortly after pus was found below the joint over the olecranon; this was treated in the same way. I could not find any communication with the joint from either of these cavities.

The arm was kept in a splint and the pus cavities washed out every other day with an antiseptic wash, the patient all the time taking a tonic of iron and quinia; his temperature all the time keeping one and a half to two degrees above normal. Two or three weeks after the last abscess was opened, denuded bone could be detected with a probe in both openings.

Prof. J. S. Wight saw him with me, and advised a continuation of the treatment a while longer. Soon crepitus could be detected on manipulating the joint. Prof. Wight saw him with me again, when it was decided to remove the diseased bone, which I did, December 27, 1887, assisted by Prof. Wight and Drs. Buckmaster and Brewster.

A longitudinal incision was made on the posterior aspect of the arm, from about two inches above the olecranon to about two inches below; the tissues were drawn apart, the ulnar nerve exposed and drawn to one side, when about an inch from the lower end of the humerus, about an inch from the upper end of the ulnar and the head of the radius were removed. The wound was washed out with a bichloride solution, the parts drawn together, an antiseptic dressing applied, and the arm placed in a right angle splint. Convalescence went on slowly, giving the man a good and useful arm.

The bones of the forearm are drawn up in front of the humerus, the radius seems to articulate with it, but I do not think the ulna does. Rotation and flexion of the forearm are good. As the attachment of the triceps to the olecranon is lost, extension is considerably impaired. Flexion and extension of the hand and finger are good; the grasp of the hand is firm. The arm from the shoulder to the tip of the middle finger is two inches shorter than its mate; and there is some atrophy of the hand.

DISCUSSION.

Dr. BURGE.—It speaks for itself as an exceedingly interesting case, and I think its present condition testifies to the excellence of the operation. It does not occur to me to say anything very special upon the subject beyond this, that the use of the fingers seems to be good and the nerve connections well preserved.

Dr. WIGHT.—I only wish to say very briefly that the facts of the clinical history, from what the doctor has said and from what I remember of it, and tracing along the line of the facts all the way up to the present, as they come to my judgment, without going into detail, I arrive at this conclusion: that it is an example, an important example, of conservative surgery, the conservatism that ought to be put in force nowadays from time to time, while we are inclined to amputation. That is one of the greatest triumphs of conservative surgery that I have known, saving a limb that had just a chance to be saved, a useful limb, and saving a man's life and putting a fairly useful limb in the place of no limb at all, with a very good movable joint, so that it can be used to help support his family. It seems to me that such a case as that should be presented to every practical surgeon, to give him at least a strong suggestion in the direction of conservative surgery, especially in the upper limb.

Dr. PILCHER.—One thing that is particularly remarkable about this is the freedom from atrophy which the muscles of the forearm present.

Dr. WESTBROOK.—The muscles of the forearm measure more in circumference here than the sound arm; there is some atrophy of the hand.

Dr. PILCHER.—I think that is very unusual. Is there any reason you can give for the preservation?

Dr. WESTBROOK.—The flexor muscles seem to be used almost altogether, and that is the only way I can account for it.

Dr. WIGHT.—Wouldn't it also be due to some extent to the shrinking?

Dr. PILCHER.—It is now, I believe, nearly two years since the operation. The excellent range of motion which he has at the elbow and the strength which he has in it are remarkable. And there is no apparent threatening of any recurrence of trouble about it, it seems to be thoroughly healed.

Some of the gentlemen may remember the case of a young girl whom I presented here more than a year ago, showing the result after an excision of the elbow, in which at the time I presented her there was almost a flail-like condition, from the considerable separation of the bones of the forearm from the humerus with only the soft tissues between. At that time I suggested the propriety in that case of operating again, refreshing the ends of the bone and bringing them up together and endeavoring to secure ankylosis. In course of time I did such an operation. I refreshed the bone ends and brought them up together and sutured them, and succeeded in getting the parts united again, with the bones in close relation to each other, but still without ankylosis; I had a good movable elbow joint. In that case also there was recurrence of tuberculosis in the parts, so that two or three secondary operations had to be done by me before it was entirely overcome. It is now soundly healed, however, and the patient has a useful arm, though by no means as strong and well developed as this. She plays the piano with her hand. In that case, however, there had been disease of very much longer standing; she had had disease of the elbow joint for twelve years or more, and there was much atrophy to begin with. As Prof. Wight has remarked, these cases show the possibilities of conservatism in connection with extremely threatening conditions, and would encourage us to make an attempt at conservatism before condemning a limb to amputation.

THE LEGAL RELATIONS OF IMBECILITY AND OF SUICIDAL AND HOMICIDAL MANIA.

BY EDWARD C. MANN, M.D., F.S.S., BROOKLYN, N. Y.,

President New York Academy of Anthropology. Member Medical Society of the County of New York, etc.

Read before the American International Congress of Medical Jurisprudence, held in New York, June 4, 5, 6 and 7, 1889.

LEGAL RELATIONS OF IMBECILES.

In determining the civil and criminal responsibilities of the imbecile, several points must be borne in mind by the lawyer. With regard to their moral sense this class have no clear definite idea of rights, justice or law. They cannot feel for the sufferings of others. They see only in the most imperfect manner the consequences of their acts. They gratify every appetite or desire regardless of consequences. Their appetites and passions are not restrained by the higher faculties of the mind, which are deprived by disease or bad development of their power to restrain or guide. Theft is very common with them. They have not the mental competence necessary to make them legally criminal, and it does no good to punish them in this way, as they recommence their offences the moment they are released from confinement, and thus are thought to be simply wicked. Those who have strong sexual propensities, if men, soon become guilty of outrages on women and are imprisoned, as they are judicially decided to be rational beings. There are many imbeciles who daily engage in occupations that require no great extent of mind and who perhaps are merely thought singular by their friends. With respect to their civil responsibilities, if there exists an inability of comprehending the value of numbers, the person is evidently not capable of managing property. Ray very properly says, that the real capacity of an imbecile's mind is to be estimated not from any single trait, but by a careful appreciation of all its powers, and especially in their relation to the particular act in question. Relative to marriage, the person should be proved to have had a rational idea of the marriage contract and of the duties and relations incident to the marriage life. Respecting a business contract, the question would be, had the person an adequate idea of the money involved in the transaction? Was he independent and executive, or was he credulous and submissive to his friends regardless of what happened? It is no test of capacity that a person of either sex has behaved fairly well in company, especially when they have moved in cultured circles. This, by constant repetition, has become

automatic. Can the alleged imbecile form a judgment respecting any new object? How is his memory? Is he subject to gusts of passion? Is he unfitted for all matters that require more than a mechanical mode of action? Is he aware of his weakness and of the intellectual superiority of others? Can he seize an idea so clearly as to impress it on his mind? Is he irritable and suspicious? Has he a clouded state of the understanding and memory? Is he incapable of judging and deciding, when it is necessary to weigh opposing motives? Can he express a complex idea? Can he appreciate the circumstances that distinguish particular cases and appreciate them according to their just value? The lawyer and jurist should carefully weigh the points when the civil responsibilities of alleged imbeciles are in question.

Respecting the *will* of a weak-minded person, if the person in question was capable of understanding its nature and effect, the instrument should be established, and *vice versa*. The question of interference or improper influence should of course be carefully scrutinized. (See Swinburne on Wills, part 2, section 4, and 1 Story, Commentaries on Equity, 238.)

Ray says, when the mental deficiency has not been sufficient to provoke interdiction, it very properly constitutes no legal impediment to marriage; but on proof of fraud or circumvention, the marriage has been pronounced by the courts null and void (Portsmouth v. Portsmouth, 1 Haggard, 355; Miss Bagster's case ante, section 85). The last imbecility case in New York that greatly attracted public attention was that of Miss —, who was deaf and dumb, and suffered from the first degree of imbecility, whose relatives sought for a decree of nullity of marriage which she secretly contracted. That this young lady was considerably below the average in point of intellect cannot be doubted, as the evidence to that effect was remarkably strong and copious. She had very few ideas on any subject. Her intellect evidently was not strong enough to restrain or direct any tendencies of her nature. She could to questions relating to any but the most commonplace subjects, even in the deaf and dumb language and through a skilled interpreter in the sign language. She was not acquainted with arithmetic, and was therefore incapable of taking care of her property. She had no judgment and reasoning power as to the marriage contract and relation. The marriage contract is a very simple one, and it does not require a very high degree of intelligence to understand it. Miss —, in our opinion, did not have either such a degree of mental capacity as to enable her to have a comprehension of the words of promises exchanged, or a real appreciation of the engagement entered into; neither could she understand the nature and value of property and its management. She deserved the protection of the court, and

had it. The sheriff's jury and commissioners before whom the case was tried, saw at once that Miss P—— was incapable of comprehending the nature of the marriage ceremony and contract, and also of managing her own property: and the case was brought to a speedy termination by the graceful withdrawal of the counsel for the husband, upon our opinion, expressed after a personal examination, that the husband had no case and that real incapacity existed, which should render such a marriage null and void. The jury returned a verdict of unsoundness of mind. In every such case the practical questions are:

1. Whether there are or are not such peculiarities in the conduct of the person under inquisition as are known to be characteristic of imbeciles.
2. Whether there is incompetency to manage property.

Whether the person at the time of the marriage is capable of understanding the nature of the marriage contract. The fact of a person being deaf and dumb certainly does not raise a presumption of mental unsoundness, and any of the deaf and dumb can legally contract marriage, when it can be shown that they understand the meaning of the contract.

LEGAL RELATIONS OF SUICIDAL AND HOMICIDAL MANIA.

Although, of course, occurring in both sexes, the majority of cases of homicidal mania in our experience have been among women, and as the result of grief, anxiety, from uterine disease, at the menstrual period, at the climacteric period, and after delivery, especially the last, when complicated with seduction and desertion. Women at these times are in a peculiar nervous state, not unfrequently I am led to believe accompanied by impulses to crime, and we do not consider them as responsible for overt acts committed at such times, especially when the overt act is antagonistic to the whole previous character of the woman. The existence of homicidal insanity ought never to be admitted without the proof of other symptoms of mental disease than perverted instinct itself, or at least without the existence of well recognized or efficient causes of mental disease and an obvious change in temper and disposition consequent thereupon.

1. Suicidal Mania.—This generally accompanies a condition of melancholia, and we would strongly maintain the necessary dependence of suicide or insanity. The unhappy patients reason and struggle against the fatal propensity, but in vain. The desire to die by one's own act appears to be the one mental symptom and to present the most undoubted instance of disease affecting only one function. The majority of these cases are hereditary.

Cases illustrating the legal consequences of Suicide.—Suicide may not invalidate a will by raising an inference of previous derangement. (*Burrows v. Burrows*, 1 Haggard, 109; *Brooks and others v. Barret and others*, 7 Pickering, 94; 2 Harrington, 583; and 2 Curteis, 415).

Chief Justice Parker, of Massachusetts, held that suicide committed fifteen days after the date of a person's will was not sufficient, in the absence of other evidence, to prove him insane and thus invalidate the will. With relation of suicide to life insurance, in the case of *Borrodale v. Hunter* (5 Man. and Gr., 639), the court charged that, if the deceased threw himself into the river, knowing that he should destroy himself, and intending to do so, then the policy would be void; but if he did not know right from wrong when the act was committed, then the policy would not be void. The jury found both that he intended to destroy himself and that he did not know right from wrong. Judgment was entered for the office and confirmed. In case of *Cliff v. Schwabt* (3 Man. and Gr., 437), the jury gave a verdict for the plaintiff, thereby deciding that a policy was not necessarily vitiated by suicide. On appeal this judgment was reversed. Taylor, *Medical Jurisprudence*, p. 650, 5th Am. edition, says truly that the term "suicide" in insurance policies applies, as it ought to do, only to cases in which there is no evidence of insanity. This cannot too strongly be insisted on as proper law. In the case of *Breasted v. Farmer's Loan Co.* (*Wharton and Stille on Mental Unsoundness*, p. 172), the New York Court of Appeals decided in a case of this kind, where the evidence showed that the person "was of unsound mind and wholly unconscious of the acts," that the insurers were responsible. Although in Wisconsin and Pennsylvania the most recent judicial opinions have been that attempted suicide raises no presumption of insanity, and while such ruling is sure to be advocated by those insurance companies by whose rules the policy is made void by the act of suicide, the proper rule is that laid down by the New York Court of Appeals in the case above mentioned. A safe rule is this: Where the propensity to suicide is connected with an obviously melancholy disposition, it should be regarded as indicative of mental disease. We must not lose sight of the fact, however, that while pursuing ordinary vocations and manifesting very little if any depression, a person may have impulses to suicide, which they brood over until some moral shock of domestic grief or of business reverses deprives the unhappy person of all power of resistance, and the meditated suicide is perpetuated. We must remember, too, that very often the patient who is prevented from committing suicide, after recovery has no recollection, or at most but a faint and shadowy one, of the fact itself, and believes it on the testimony of others. My experience, has been different in

different cases ; and some cases I have attended have expressed a regret that they did not accomplish the act, and declared their intention of accomplishing it whenever the opportunity should offer. Two cases within my knowledge did this very thing, being improperly guarded by their friends. I have in mind a case which has been under my medical observation for several years. This case would undoubtedly be taken by any insurance company as a fairly good risk, and I doubt whether in case suicide was committed, if a jury would not bring in a verdict of sanity. I, however, know the reverse to be true. I know that for years, although never expressing such ideas in society, that this person has labored under constant depression and melancholy, has to her husband conjured up the darkest prospect, and has constantly predicted everything of a gloomy nature. Her melancholy mood will alternate with periods of comparative cheerfulness, and society has never, I think, suspected unsoundness of mind. Yet this person has twice attempted suicide, and each time the writer was called upon to attend the case and the person was restored. This case I regard as a sort of monomania. The nervous system is weak, there are cases of insanity in the family, insomnia is very frequent, and the patient is listless and more or less depressed most of the time. I would not regard her as responsible for any overt act she might commit, and have expressed fears respecting her future. Yet it would be considered a great cruelty to consign this case to an asylum, nor would her husband permit it, although he appreciates fully the nature of the case. To society at large, an overt act would be the first symptom of mental derangement in this case they had noticed. Such a case shows clearly that we cannot accept the verdict or opinion of any person's sanity or the reverse, coming from persons who only meet each other in a society way. We must search the family history and the past history from youth up of the individual and take the testimony of those who have occupied the closest relations to the accused. The testimony of an old family physician who has known all branches of the family is of immense importance sometimes, and of much greater value at times than a casual examination of one who has never seen the patient before, even though the former may know little about mental medicine. No experts in mental and nervous diseases of any age or experience in medico-legal trials will either deprecate or undervalue the importance of the services which the general practitioner of medicine, or family physician, is frequently able to render to justice, in trials where insanity is alleged as a defense, or will decline to serve on a case with him. On the contrary, he will respect his opinions as those of a man who has had the closest relations with the family, and who perhaps has known the person on trial from childhood and who also

knows, very likely, the whole family history and hereditary tendencies to disease in that family perfectly. The writer has frequently received from the family physician most important information, which has been of great service to him in arriving at an opinion in a perplexing case. My experience agrees with my researches in that I firmly believe the suicidal tendency to be markedly hereditary. There was a case of this kind recently under our care, where the suicidal tendency was most marked at each menstrual period, and we are looking forward with some anxiety to the climacteric period. There is phthisis, rheumatism and insanity in this family. There are many people who have no delusions, but who suffer from brain disease, whose only symptom seems to be uncontrollable impulses of a morbid nature. These impulses are generally recurrent with these people, but the difficulty is that while an act of destructive impulse in a person already in an asylum is condoned, a similar act done by a person whose sanity has never been disputed is visited by the extreme penalty of the law. A great step will be gained if the judges can be made to believe, what science teaches exists, in the existence of such a thing as loss of self-control, the result of disease, and more importance should be attached to this matter of impulse as regards the exhibition of leniency in trials for murder.

LEGAL RELATIONS OF HOMICIDAL MANIA.

The legal test of insanity in criminal cases in case of homicide should be the existence of any subjective morbid condition of the nervous system which misleads the mind or conduct. The basis of insanity consists in the changing and misleading subjective impressions of the insane person, coupled with the resultant change of conduct or of reasoning, or both. There is a change of mental character as compared with the former self or normal ancestral type. I fully agree with Dr. C. H. Hughes, that physical disease, sickness, impresses itself on the conduct or character of the person affected by it, misleading and perverting him in the exercise of his psychic powers. We must recognize as a sick man one who has the undefined perversions of feeling displayed in melancholia and homicidal and suicidal impulses, and also the kleptomaniacal, pyromaniacal, nymphomaniacal and other erratic feelings which mislead the judgment and conduct of the insane. Violent homicidal impulses are very common in the epileptic, sometimes preceding, sometimes following, the fits and sometimes taking their place (masked epilepsy).

Imbeciles are peculiarly liable to impulses to murder, and often give way to the uncontrollable impulse. There is an instinctive or impulsive mania, and Guy correctly states that the homicidal acts

committed under its influence have most or all of the following characters. They are without discernible motive, or in opposition to all known motives. A man kills his wife, to whom he is tenderly attached; a brother, his sister; a mother, her infant. The victim may be somebody whom he never saw before and against whom it is impossible that he should have malice. The victim of this blind passion may be an animal incapable of offence. After the commission of the act he does not seek to escape, he often tells what he has done, he does not conceal the body, but openly exposes it. He delivers himself up to justice. He tells of the state of mind which led to the act, and either remains stupid and indifferent or is overwhelmed by remorse. He has no accomplices; has made no preparation; and takes nothing from his victim. Perhaps he has told of his strong impulse to kill and has begged to be restrained. These homicidal acts are generally preceded by a striking change of conduct and character, and on inquiry the accused is often found to have an hereditary tendency to insanity, to be subject to fits, to have attempted suicide, or to have wished for death.

HOMICIDAL MANIA RESULTING FROM RELIGIOUS INSANITY.

The cases are constantly under excitement or depression, and are subject to illusions and delusions. "They transform the persons with whom they are associated into supernatural kings, endowed with authority or power not to be questioned or resisted; and they convert common and familiar sounds into the articulate language of temptation or command. One religious maniac therefore kills a relative or keeper, imagining him to be a fiend; another, that he has a direct commission from the Deity to fulfil some mission of wrath or extirpation. In cases of religious mania we can never safely affirm that the homicidal act may not be the natural consequence of a command which the insane person would deem it impious to resist, or of a delusion which places him, in his own sincere conviction, beyond and above the operation of human laws. The maniac who believes himself to be God or Christ, would, from the very nature of the case, deem himself irresponsible."

HOMICIDAL MANIA FROM JEALOUSY.

In these cases the jealousy has shaped itself into a distinct delusion, and they are such acts as if committed by some men on the evidence of their senses would be punished as manslaughter and not as murder.

HOMICIDAL MANIA FROM DOMESTIC ANXIETY, EXAGGERATED INTO FEAR OF STARVATION.

These persons who kill their children are generally noted for their domestic virtues and great attachment to their victims, and there is not

one point of resemblance between these insane murderers and ordinary criminals.

HOMICIDAL INSANITY FROM DELUSION.

A homicide, the result of a delusion on the part of the insane man, may be accomplished much as a sane criminal would do it. Deliberation, forethought, and preparation may all enter into the accomplishment of the deed, but we must not infer that therefore the insane man had such an amount of self-control as will prevent the homicidal deed. He has not. We must not confound the act itself with the mode of accomplishing the act. To leave the subject of homicidal mania arising from morbid motives and delusions and return to it as a monomania or as simply an irresistible desire to kill, it is of importance to have in mind that it may coexist with general defect or disorder of mind. It is of the greatest medico-legal importance to know that there may be outbursts of maniacal fury with homicidal impulse, and no reliable proof of any prior history of mental disease. The most distinguished physicians devoting their time exclusively to treating mental and nervous diseases, both in Europe and America, concur and unite in their belief that the insane and irresistible impulse prompting to murder and destruction, which has been designated homicidal monomania, is a distinct disease from which even childhood is not exempt. The powerful impulse to kill is felt, against which the monomaniac himself strives most earnestly. Bucknill and Tuke, Sir Crichton Browne, Drs. Skae, Wilks, Woodman and Tidy, Guy, Krafft-Ebing, Castelnau, Devergie, and every physician of note as an alienist, all agree as to the existence of homicidal mania as a distinct physical disorder, and as it is a fact of science, law should also recognize it.

SOME POINTS ON THE TREATMENT OF HOUSE-MAIDS' KNEE.

BY J. S. WIGHT, M D.,

Professor of Operative and Clinical Surgery at the Long Island College Hospital.

Read before the Brooklyn Surgical Society, November 7, 1889.

Many years ago I saw a scrub-woman whose right prepatellar bursa was much enlarged and full of fluid. She suffered some pain and had considerable disability. I passed a surgeon's needle, armed with a strong silk thread, through the sac from side to side, and tied the ends in front of the knee. The fluid slowly ran out of the needle-punctures by the side of the thread, and the sac was kept well drained. The irritation of the thread caused considerable inflammation of the

bursa. Yet the patient kept about her work in the meantime. At the end of four weeks the surfaces of the sac had grown together, as it were, by granulation. I removed the silk thread, and found that my patient was cured—the bursa being obliterated. Other patients have not been inclined to submit to this practice.

For many years I have applied the following plan of treatment of enlarged bursæ: Lay open the sac completely by a vertical incision in front; evacuate the fluid; remove the rice-like bodies; excise the fleshy bands and cords; and cut out the vegetations. Then wash out the cavity with an aseptic lotion, and fill it with an aseptic dressing. Irritation, inflammation, granulation, and repair will take place one after the other, and the sac will be obliterated in about four weeks, leaving a permanent cure. I have operated on many cases in this manner, and consider the practice excellent and desirable.

During the last few years I have operated in a new way on a number of cases of house-maids' knee. I have obliterated the sac by obtaining primary union of its entire cavity. The operation is one for producing a radical cure, and its steps may be described as follows:

1. Make the parts to be operated on completely aseptic.
2. Incise the anterior wall of the sac from above downward to the full extent of the cavity.
3. Evacuate the contents of the sac, both fluids and rice-like bodies.
4. Then wash out the sac with an aseptic fluid.
5. Shear out the vegetations down to the surface of the sac, and excise all fleshy bands and cords, which are sometimes large and numerous.
6. Scrape the entire surface of the sac, so as to make it one complete raw surface.
7. Wash out the denuded sac with a bichloride solution of proper strength—say, one to three thousand.
8. All pockets and diverticuli should be carefully included in the process of denudation.

The result will be a fresh wound that can be repaired by primary union, if the surfaces are properly brought and kept in apposition. The closing of the wound is accomplished in the following way:

9. Six or eight deep sutures are put in from side to side, so as to be under and concealed by the posterior wall of the sac. These sutures are in front of the patella, and of course are not very deep. They are at considerable distance from the incision on either side. Their ends are now left for the time being dependent.

10. After the wound is washed out again with an aseptic fluid, the cut edges of the anterior wall of the sac are carefully brought into appo-

sition by means of a number of superficial sutures, which are properly tied.

11. Any blood or fluid is now well pressed out and wiped off the front of the knee, which is then dusted with pulverized iodoform.

12. An aseptic absorbent compress is laid over the front of the knee between the deep sutures. And then the deep sutures are carefully and firmly tied in front of and over the compress, completely closing the denuded cavity of the prepatellar bursæ. An aseptic pad is put on over all and kept in place with a bandage. And the patient is put in bed, and not disturbed for three or four days.

The story of the after-treatment of these cases may be briefly told: At the end of about four days I have removed the outside dressing, and then cut the deep sutures close to the skin on one side, when they can be taken out. The removal of the aseptic compress must be made with care, so as not to break the new bond of union. The knee is dusted with iodoform, and then a pad is applied as in the first place. At the end of a week this dressing is removed, and the superficial sutures have been taken out, when complete primary union has occurred. A few days of bandaging is followed by the patient going about. There has been no severe inflammation. Suppuration has been absent. A very desirable repair has caused the obliteration of the bursal sac.

Two special cases of obliteration of the bursal sac may be very briefly noted:

1. A gentleman about fifty years of age had a large hydrocele of the right prepatellar bursa. He fell and bruised the upper part of the front of the right leg, causing a considerable hæmatocele, which communicated with the bursal sac above. I treated this complicated injury in the manner above described, and the result was primary union of the walls of both the hæmatocele and the bursal sac.

2. A sailor about forty-five years of age had a large hydrocele of the bursa over and back of the right olecranon. I treated this just as if it had been a prepatellar bursa. There was some difficulty in introducing the deep sutures: the sutures had to be first brought out on one side of the olecranon; then they had to be reintroduced and carried across the back part of the olecranon and brought out on the other side of it; and then they had to be again reintroduced and finally brought out of the integument on the side opposite the one in which they began. The bursal sac was completely closed by means of a double row of sutures. At the end of four days the deep sutures were removed; and at the end of a week the superficial sutures were also removed, and a complete cure resulted.

In this operation it will be noted that the deep sutures, when they

are tied, completely surround the superficial ones: the latter close the incision, while the former close the sac.

In fine, it may be remarked that the bursa in front of the patella is a joint-sac, as it were, so that the patella can move freely and easily between the femoral condyles and prepatellar integument. All bursal sacs are the lining membranes of small joints that are formed to facilitate motion. The principle of the practice we have been considering consists in a desirable and speedy obliteration of the prepatellar joint, so that there is no cavity to get full of fluid. The disease is a kind of hydrops-articuli. Aseptic surgery enables one to attain to results that are far in advance of the practice of a few years ago. And it is a desirable thing to take a little more time for an operation, so that much valuable time may not be lost in dressing suppurating wounds from day to day.

DISCUSSION.

Dr. WACKERHAGEN.—I would like to ask for information, if Dr. Wight thinks the deep incision is necessary.

Dr. WIGHT.—Absolutely necessary. It will absolutely fail without.

Dr. DELATOUR.—I have seen a number of cases treated by Dr. Fowler by trying to obtain a Shede clot. Instead of suturing the wound, he allows the cavity which has been cleaned out to fill up with blood clot, and attempts to get union in that way. I have seen two cases, and know of two others, that were treated in this way without any trouble whatever, and the wound had entirely healed at the end of two weeks. That I think is a simpler way of treating them than passing sutures, for it certainly must take considerable time to pass the deeper sutures.

Dr. BURGE.—It would seem to me, Mr. Chairman, that a certain proportion of those cases, which are not very large, not very extensive, after curetting the cavity thoroughly, might be so firmly brought together by pressure, having the patella below as a good *point d'appui*, as to obliterate the cavity and get good union without deep sutures. I have no special experience in the treatment of those cases to fall back upon; I have not seen many cases of housemaid's knee since aseptic surgery has been in vogue. I saw Dr. Rae operate in one case which he treated in the way I have mentioned, but I have heard no report of it since. He cut down and cleaned it out very thoroughly, put a compress on and bandaged it, and I shall be interested to learn from him with what result.

Dr. WESTBROOK.—I have not seen any cases treated in the way Dr. Wight speaks of; theoretically, I should think very favorably of it, the deep suture operation.

Dr. PILCHER.—The operation which has been described I infer to be applicable more especially to non-inflamed bursa

Dr. WIGHT.—Yes, to hydrops.

Dr. PILCHER.—It is more frequent that our attention is called to them when they have been irritated and brought into a condition of acute inflammation. Many patients will go years and years with a simple hydrops bursæ, and look upon it as a trivial affair. In simple hydrops of the prepatellar bursa, I have, upon several occasions, gotten very desirable results by simply evacuating the bursa through a small canula, and then injecting carbolic acid. In all the cases, indeed, in which I have tried that method, I have succeeded in getting it obliterated in the course of a short time. It fills up again, and then the effusion subsides, and then the sac is obliterated and the bursa is cured.

When there is an already existing inflammation, it may be that a simple evacuation of it and the application of pressure will produce the desired result. When it has passed on to suppuration, then the free incision and draining are the things to do, unless we choose to go still further, as I have had occasion to do in one or two instances, excising the whole sac.

I shall be interested to put in practice at the first favorable opportunity the method which has been described in the paper of the evening, for it is certainly based upon sound surgical principles, and must be successful if carried on in accordance with the principles described in the paper. But my own remark has been simply to call attention to the fact that there are bursæ and bursæ, and it is well for us to be equipped with a variety of resources in meeting with them. The bursæ to which the method of the speaker of the evening would be more particularly applicable would be those that have been especially spoken of by him, in which there are these fibrinous concretions and a thickened wall and bands and granulating masses projecting into the cavity of the bursa, all of which by the method of erosion are cleared away and a fresh, free surface for adhesion produced.

Dr. WIGHT.—The paper did not at all contemplate inflamed or suppurating bursæ. The principles that would be applicable there should invariably be thorough curetting. A suppurating bursa needs opening, of course, and for those cases I continue the operation that I described of laying them open and letting them granulate from the bottom.

With reference to an effort to get primary union of a sac of this kind that is not inflamed, that is in a chronic state of hydrops, I have made some efforts in that direction. The compression does not answer like the suture, and I have been defeated and have not succeeded

properly until I had sutured them; and the suturing, if carefully and rightly done, does do the work. The bursæ that I have seen and operated upon—I have only quoted two cases, for I didn't think it worth while to quote them all, and yet it might have been worth while to mention what I am going to mention now: In many these bands are very large and heavy, they are in the way, and I have seen vegetations on them that are almost cartilaginous, in fact, they require a bone scraper to get them off, and in one instance I even took my chisel and chiseled them off; I could do it quicker with that than I could with any other instrument. These would always be in the way of compression, without their denudation the surfaces could not be got together. I started out thinking I could do it, but I always failed.

Then we have the great advantage of having to dress our patient only twice as a rule, and he is well at the end of a week, no trouble, and he is cured, he is well. And it does not take so much longer to operate, the deep sutures can be put in quite rapidly. I use a very strong straight needle, and when the curve of the patella is such that I cannot get it in, I take it out and put it in again, so as to bury the suture underneath the fibrous structure in front of the patella, and in that case I can close the sac entirely, and it is truly surprising to see one of those cases unite in that way and obliterate the sac. I have not failed in any case that I have undertaken in that way.

Because I have had such results I was very desirous of bringing the attention of surgeons to that question, for I regard the surgeon who can make scar tissue soonest, with the least disturbance, the best surgeon, all other things being equal. In other words, it is the business of the surgeon to make scar tissue rightly and with the least inconvenience and trouble to his patient.

If there is any question as to the expenditure of time, it is really less, for fifteen or twenty minutes now will save you half an hour a day for a week or two.

Dr. WACKERHAGEN.—I understood Dr. Wight to say he curetted the whole surface thoroughly before putting in the deep sutures.

Dr. WIGHT.—Yes.

Dr. WACKERHAGEN.—What sutures do you use?

Dr. WIGHT.—I take embroidery silk, nearly the largest size I can get, and cut pieces of such lengths as I want, passing it through one to five thousand bichloride solution; they may be immersed half an hour, or fifteen minutes is enough. And I have some wax made of one part iodoform and four parts beeswax, and enough oil to make it soft, and I wax them thoroughly with this wax. I use those sutures for all kinds of purposes and I have not had any suppuration from those sutures since I have used them. I have had suppuration where some

person who has been helping has come short and taken raw silk ; but that won't do ; you must have your bichloride solution and have the sutures properly prepared. You can prepare them at the time of the operation. I do not say there is no better way ; there are plenty of ways just as good ; but it is so convenient to prepare what you want and prepare them just when you want them ; it is simple and easy and very efficacious ; and I have entire confidence in them, and have not the slightest question of moral delinquency in using them.

Dr. WACKERHAGEN.—I would like to ask if any of the gentlemen have used cotton thread for sutures and ligatures. In the German Hospital they are using them for all sorts of sutures. The cotton thread is preserved in bichloride solution, and they are cut short, after the method of using catgut.

Dr. WIGHT.—Is it claimed that the cotton is absorbed better than the silk ?

Dr. WACKERHAGEN.—They have had no trouble with it. It has been used in the German Hospital for six months I understand. They use it there because it is cheaper than silk, and they think it more reliable than catgut.

Dr. WIGHT.—I think I should prefer to use the catgut.

Dr. BURGE.—You get a greater strength in the cotton in smaller fibre, and if it answers just as well it would have some advantages, would it not, over the catgut ?

Dr. WACKERHAGEN.—They use it universally now ; they seldom or never use catgut in any operation.

Dr. WIGHT.—I suppose the knots must become encysted.

Dr. BURGE.—I should think they would occasionally do harm by pressure on nerve fibres.

Dr. WACKERHAGEN.—The cotton is of small size, and I do not believe that the pressure would produce any effect at all. I know they have used it for six months in the German Hospital very satisfactorily.

Dr. WIGHT.—The price for that purpose betwixt silk and cotton would be small. I get a spool of silk for a dollar that would last almost a year for all I can do every day ; and catgut is not expensive now.

Dr. WACKERHAGEN.—I have heard a good deal about infection from catgut, but I have never had any trouble with it myself. I prepare my own catgut sutures, and I am sure that they are aseptic.

Dr. WIGHT.—I do not know what there is about it, but when I have used it for sutures it has been troublesome. When I have covered it up it has never given me any trouble, and silk that I have prepared for sutures has not given any trouble.

INHALATIONS OF OXYGEN AS AN ADJUNCT IN THE TREATMENT OF PNEUMONIA.

BY J. M. WINFIELD, M.D.

Read before the Medical Society of the County of Kings, Nov. 19, 1889.

Heart-failure, occurring during the course of pneumonia, is of such alarming import that physicians gladly embrace every means of combating it. There are a number of reports of the use of oxygen in other diseases, but the records of its having been used in acute pneumonia are very scarce. During the discussion of pneumonia, at the annual meeting of the New York State Medical Association ("Transactions of N. Y. State Med. Association," 1885), Dr. E. G. Janeway said: "I have used oxygen with much success in certain cases [acute pneumonia]. I begin its use just as soon as cyanosis shows itself, or before, if that condition be imminent. The extent of lung-tissue involved should guide us to a pretty accurate forecast. When the cyanosis disappears, I let up; when it reappears, I resume." He also mentioned three cases: when the upper and lower lobe of one side and the lower lobe of the other were involved, oxygen seemed to turn the tide in favor of recovery.

In a paper on "Oxygen as an Antipyretic," read before the Royal Academy of Medicine, Madrid (London "Lancet," June 4, 1887), Dr. Valenzuela reports a case of double pneumonia where oxygen lowered the temperature from 102° to normal; after which rapid recovery ensued. He also referred to some other cases, in which this agent appeared to have a beneficial action.

Two cases have been reported by Dr. Holtzapple ("New York Medical Journal," Sept. 3, 1887). In one the gas gave a good result; the other was negative.

Bacilli, president of the Italian Society for Internal Medicine, recommends its use in pneumonia ("Wiener med. Wochenschr.," 1888, 1718).

The results obtained in the following cases would seem sufficiently favorable to justify further trial.¹

CASE I.—A strong, robust man, aged twenty-eight; seen first March 17, 1888. Complained of pain in right side. Had a chill on evening of 16th, followed by fever. Temperature now about $102\frac{1}{2}^{\circ}$. Respiration difficult on account of pain. Physical examination

¹ There was also a passing notice, given to its use, in a single case by a Boston physician, reported recently in the "Boston Surgical and Medical Journal." Notes have been misplaced. J. M. W.

revealed evidences of pneumonia of right lower lobe. Gave the usual treatment. On the 18th and 19th the symptoms were about the same. The morning of the 20th found the patient much worse. Temperature 104° ; pulse rapid and feeble. Whole lung involved. Gave tr. strophanthus and whiskey. Was hastily called early in the evening (*i. e.*, at beginning of fifth day of illness). Found him in an alarming condition. Pulse rapid, feeble, and irregular. Respiration panting and shallow.

Alcohol and the other stimulants seeming to be inadequate, oxygen was procured. After inhaling the gas for about three minutes, the patient became quiet, but there was no appreciable effect on symptoms. Resumed inhalations after a short time. The man began to experience a sense of comfort, which was followed by a slight diminution of pulse-rate. Respiration became deeper and less panting. The nurse was instructed to continue the inhalations at short intervals through the night. At midnight the patient was sleeping quietly. In the morning his temperature had fallen to 100° . Respiration good; pulse full and strong. All the signs of resolution rapidly followed.

CASE II.—Has been contributed by Dr. Jenner. Male of forty years, strongly built and temperate; seen July 5, 1889. Complained of having had a severe chill. Had pain more or less in both sides of chest. Bowels constipated. Gave calomel and jalap purge, with poultices to chest, etc. On the 6th found evidences of consolidation of right lower lobe. Gave tr. digitalis, and began with whiskey. 7th, symptoms about the same, except a slightly higher temperature in the evening. The evening of the 8th, pulse became rapid and feeble. Began the use of oxygen. Noted improvement of circulation while it was inhaled. Directed that the oxygen be used every three hours. The 9th, the symptoms just the same. On the 10th found that the nurse had used the oxygen and whiskey very sparingly because the patient objected to them. Pushed the inhalations, with the effect of improving the pulse and respiration. They were again discontinued; patient rapidly sank, and died on the morning of the 11th. Had the oxygen been systematically and persistently used, we have reason to believe that the transient good effects would have continued, and the patient would have safely passed the dangerous period.

CASE III.—Occurred in the practice of Dr. Wm. Browning. B., forty years of age, a powerfully built, somewhat intemperate man. Had seen a doctor, on the 8th of May (1888), for pain in the side. Some treatment was given. Dr. Browning saw him on the 11th. Found signs of pneumonia of lower half of left lung. Temperature 104° ; pulse fair. Gave, in addition to the regular treatment, a large dose of calomel (forty grains), with the effect of weakening the man,

and none on the disease. The next day (12th), about noon, his condition became alarming. Respiration rapid; elevation of alae nasi; failing circulation, as shown by the cyanosis. This was probably the fifth day of the disease. Obtained oxygen and began inhalations. After the very first the patient expressed himself greatly relieved. The gas was frequently administered during the afternoon, and by late in the evening he began to show marked relief, objectively as well as subjectively. Although the urgent symptoms were controlled, the disease continued for about thirty-six hours, when resolution was established.

All the cases reported, with one exception, were males; ages ranged from fifteen to thirty-five years. The oxygen was given by inhalations, but it might be administered per rectum, for it has been proved that it is rapidly absorbed by the intestinal capillaries (Dr. Kelley, in "*Therapeutic Gazette*," 1887).

It is not the purpose of the paper to take up the subject of pneumonia, nor to dwell on the physiological action of oxygen, but simply to present a few results as they appeared clinically. The number of cases reported by any single observer may be too few to warrant conclusions, but when the general tenor is so uniform, we are certainly justified in giving oxygen our confidence. It is no panacea; it is not a remedy which is called for in a majority of cases, but it takes a place that cannot be supplied by any other means at our command.

DISCUSSION.

Dr. ECCLES.—There is one trouble with the paper; it does not state whether the oxygen was washed or not. Oxygen, if it is not washed, is likely to contain a considerable quantity of chlorine and possibly some hypochlorous acid, so that it would be difficult to say with certainty which did the work. If we had the assurance that it was well washed with water, we would know that the oxygen alone was the effective agent. The tendency of the temperature in many cases of pneumonia is at the proper time to suddenly descend without assistance, and in these instances it may have been the natural course of the disease.

Dr. WINFIELD.—The oxygen which was used is the regular oxygen sold in the market for inhalation purposes. I presume it was washed.

Dr. ECCLES.—It was probably not washed. One gentleman refers to oxygen as being toxic. The experiments of M. Paul Bert showed that, weight for weight and under heavy pressure, it is much more poisonous than prussic acid, but under ordinary conditions it has no toxic effects whatever. In cases of pneumonia where one lung is

almost useless and the other all right, the oxygen that could be consumed in the pure form would just about approach the same quantity as that taken from the air by a pair of sound lungs. Pure oxygen would, therefore, seem to be better than dilute in such cases. It would probably be wise to have the dilution inversely in proportion to the amount of lung tissue involved. The nitrogen of the air is inoperative therapeutically, the oxygen alone being active. In peroxide of hydrogen there might be some danger of toxic effects if used in large quantities, since nascent oxygen acts very much more rapidly than the ordinary free gas. The plan pursued by the gentleman to my right, of washing it with caustic soda and then distilled water, would give a practically pure article.

Dr. PAUL H. KRETZSCHMAR.—The paper of Dr. Winfield brought for the first time to my mind the fact that oxygen is not used a great deal in pneumonia; at least that is the impression I derived from his statement. I was under the impression until now that it was a common remedy in croupous pneumonia, and I have used it very frequently. I fully agree with Dr. Conkling and Dr. B. F. Westbrook as to the value of oxygen, and I wish to state that the oxygen which I have used has always been that prepared by Walton in Jersey somewhere, with an office at 280 Fourth Avenue, New York City, and it is a mixture of nitrogen and oxygen. I allow it to go from the cylinders into a rubber bag holding five gallons, and from there through the wash-bottle to the patient's mouth. In this way I can control the amount, and I use about two and a half gallons at one time, by about half emptying the bag at each sitting. I wash the oxygen every time before using. I have four cases of croupous pneumonia at present in my mind, in all of which oxygen has been used. The results are just exactly as stated by Dr. B. F. Westbrook. In one instance I have no doubt that the patient, a young woman about twenty-eight years old, was saved by the use of oxygen in liberal quantities. She was in the fifth or sixth day of pneumonia. It was a case where I was called in consultation with my brother, Dr. W. H. Kretzschmar.

We found the patient in a cyanosed condition, pulse feeble, temperature 103° , and panting for breath. Oxygen was at once suggested and applied, followed by the most satisfactory results, and I believe that that patient would not have recovered without the use of oxygen. I saw all three of the other cases in consultation, one with Dr. Jane-way, one with Dr. John T. Conkling, and one with Dr. John A. McCorkle. They all died with the oxygen, and they would have died without it. However, if it is only one in four where we can claim that oxygen has done good work, of course credit should be given to the remedy, and we should use it whenever we have an opportunity.

I would not have said anything about the use of oxygen in pneumonia, because I thought was generally used. Dr. Winfield claims that his cases are exceptional ones, but I think every practitioner is in the habit of using it in order to keep a patient above water long enough to give him a chance to pass over a crisis.

DR. HENRY CONKLING. —Mention is made in the paper just read of heart-failure in pneumonia. There are certain objections to the statements that are made as to the frequent occurrence of death in pneumonia by heart-failure. It has been my work for some time past in the dead-house of St. Peter's Hospital to make a number of observations upon the formation of ante-mortem heart clot; while the observations are not yet sufficiently numerous to give statistics, yet valuable information has been obtained from them. Some of the examinations having been made upon cases of pneumonia, the results have, therefore, a direct bearing upon the present topic.

When we make a post-mortem examination in a man well advanced in life, who has met with an accidental death, with heart normal, microscopically and macroscopically, we are bound to come to the conclusion that we are dealing with an organ which is one of the strongest in the body, and the very nature of the formation of the heart, with layer after layer of muscular fibres, seven in number, gives to it the force for long-continued work, such as it has to do during a long-continued life, so that when a person in perfect health is attacked by the sudden or severe chill of pneumonia, it is hardly rational to imagine that that person will die of heart-failure at the end of seven or eight days, for the reason that the heart muscle cannot degenerate in so short a time unless there be some septic condition. In those cases where the post-mortem examination was made there has been found an ante-mortem clot firmly adherent, well formed both in the right and left heart, and in those cases in which the clot was formed in the left heart it has been found firmly adherent to the mitral valve as a rule; usually the posterior valve, binding the valve down to the posterior wall of the left heart, producing in some instances typical mitral regurgitation, with damming back of the blood. In other cases the clot has been so formed that when the valve was opened up there has been no regurgitation present, for the reason that the clot has taken the place of the valve which is bound down and has produced a perfect closure of both orifices.

In the wards of St. Peter's Hospital I made, during the last few months, a number of tracings with the sphygmograph for the purpose of finding out the condition of the heart of a dying person. Some have been cases of pneumonia, some have been pulmonary tuberculosis well advanced, and one a man dying from relapsed typhoid

fever. Sphygmograph tracing of a patient with pneumonia on the fifth or sixth day, where there may be complete consolidation of one lung and partial consolidation at the base of the other lung, does not in any way whatever show a weak heart even at the end of the sixth day; it shows merely a heart which cannot work on account of cramped position. If the left lung be solid from apex to base the heart cannot have its normal rotary movement upon contraction. The needle of the sphygmograph does not show that the heart is weak from muscular degeneration, so I have thought that heart-failure is not so much to be looked out for as death from conditions in the respiratory and vascular tract, and those are the formation of fibrinous clots partly in the blood and partly in the lung itself. When the blood comes up to the right heart imperfectly oxidized and passes through the lungs, it does not become sufficiently oxidized by the air breathed by the patient, partly because the vessels in the lung are crowded upon and diminished, and that is why the heart has so much hard work to do.

I have used oxygen in a number of cases, especially those of primary anæmia, using it as a specific pure and simple to get rid of the leucomaines and ptomaines in the body. When the blood comes up imperfectly oxidized to the right heart the extra amount of oxygen placed around in the air in the room acts as a tonic on the blood, and lessens the tendency to the formation of these clots, and lessens the tendency to sudden death from the passage of air into the lung caused by the transmission of clots in the tract. So it seems to me that this oxygen which has been washed four times, acts simply to lessen fibrination of the blood, and in that way as a tonic to the heart. I think if it was used in all cases of pneumonia in the early stages it would heighten the prognosis and render cases of sudden death far fewer than at the present time.

In regard to the making of oxygen, I always make my own oxygen from chlorate of potash and black oxide of manganese. As it comes from the retort it is passed through two wash-bottles filled with caustic soda, then through a third wash-bottle of distilled water, and then collected in a bag, then through a fourth wash-bottle. This gives it four washings, two with a solution and two with pure water. In all of these pamphlets written and papers published, where other gases have been used with the oxygen, it is quite impossible to say whether the good results have been obtained from the oxygen or from the combination, or from the other gas, but I have always used the pure gas.

Now I do not think oxygen is a remedy to be used when the patient is *in extremis*. I think it must be used from the very start. To get the good effects the patient must breathe it himself, and the muscles

be in a sufficiently strong condition to bring the gas into the lungs. If a patient is in a collapsed condition he cannot do this, but if it is used in the early stage of the disease and the patient takes it from the bottle by the mouth it has its full effect, and also aids in preventing the complications which may arise later on.

CASE OF SYPHILITIC BONE-DISEASE OF THE ANKLE-JOINT.

BY GEORGE WACKERHAGEN, M.D.

Presented to the Brooklyn Surgical Society, November 21, 1889.

H. C., aged twelve years, complained of pain in both lower extremities, in February, 1889, and was treated by his physician for rheumatism. In a few weeks the pain generally subsided, excepting at the inner side of the left ankle, where a slight swelling was noticed. This gradually increased in size until May, when it was freely incised, and discharged considerable pus. The discharge continued, but the swelling remained about the same until July 24th, when the patient first came under my care for operation. He was weak and pallid; the swelling extended about three inches above and around the inner malleolus; the sinuses were traced, both, in an upward and backward direction, for about an inch and a half.

An incision was made through the tumor down to the bone and prolonged half an inch below the tip of the inner malleolus, and the periosteum raised as far as was necessary to thoroughly expose the bone, which was found diseased to such an extent that, after using the chisel, only a thin shell of the lower end of the tibia remained. Nearly all of the inner malleolus was removed, which made it necessary to open and explore the ankle-joint. You will notice that there remains very good motion at the ankle, and he can walk without pain.

About the 1st of October an abscess formed, involving the upper, outer, and anterior third of the right thigh. This was freely laid open, and the internal surface thoroughly curetted and treated antiseptically.

The patient's general health has greatly improved since the operation.

CASE OF EXCISION OF FIRST PHALANX OF THUMB.

BY GEORGE WACKERHAGEN, M.D.

Presented to the Brooklyn Surgical Society, November 21, 1889.

J. B., aged seven years, was injured, on the 25th of April, 1889, by a cellar-door falling upon and crushing the right thumb. The case was attended by Dr. Loughran, who brought the crushed surfaces in apposition, dressing the wound with bichloride solution and iodoform, with the hope of saving the thumb.

I saw the patient with Dr. Loughran on the 8th of May, 1889. The palmar and lateral surfaces had entirely sloughed from joint to joint, leaving a portion of skin, on the dorsal surface, one-quarter of an inch wide at its narrowest part. The palmar surface was a mass of unhealthy granulations, the proximal and distal ends of the bone exposed and necrotic.

The dead bone having been removed, the granulation-tissue was removed with the Volkmann's spoon. The distal end of the thumb was then sutured to the fleshy portion, union resulting by first intention, and with excellent motion at the joints.

CASE OF TALIPES VARUS.

BY GEORGE WACKERHAGEN, M.D.

Presented to the Brooklyn Surgical Society, November 21, 1889.

J. A., aged five years, was the subject of congenital talipes varus of the most pronounced type, and I very much regret that I failed to make a plaster-cast of the deformity. Operation was performed on the 18th of February, 1889. After dividing the tendons of the anterior and posterior tibial muscles, and also the abductor pollicis and plantar fascia, there was no reduction of the deformity.

A wedge-shaped piece of the cuboid bone was now removed, when the foot was easily brought into normal position.

DISCUSSION.

Dr. WIGHT.—In relation to each joint of the body there is a circle of dynamic relation, and that circle anatomically is made up of a bone which moves as a lever, a muscle which contracts and moves that bone, and a nerve-apparatus which is connected with the muscle, and by the reflex action of the cord, back to the sensory parts, where there are nerves which receive impressions in the joint and its vicinity, and I have noticed, in a very large number of cases of disease and injury,

where one part of this dynamic relation is disturbed, this neuromuscular apparatus with a bone as a lever, that there was atrophy in a pretty short time, sometimes rapidly, sometimes slowly.

This first case, whatever may have been the nature of the disease, its origin or history, is not any exception to that rule; if the bones are smaller, the muscular apparatus of the entire limb is disabled, and so we have there the rule carried out. That is one fact of general interest that I draw attention to.

Another is in relation to exsection of the ankle-joint; it seems to me, so far as my experience and observation go, that the ankle-joint is the most unfortunate joint of the body to exsect. My cases here have done worse than any other joint of the body, without exception. And while the doctor in this case, by an incomplete exsection, which was eminently suitable, has obtained a very creditable result, better than by complete exsection, and while I commend his work, in the majority of cases I think I should be inclined, after incision, to recommend amputation of the leg somewhere, as being the best way toward relief from disease. These remarks are not intended to criticise this case, for this is a proper one for partial exsection and a scraping out of the joint. I no longer hesitate to open any joint of the body if there is any necessity for it, even for exploration. I have opened the knee-joint and sewed it up again, and had a better one than it was before. Of course that implies judgment as to the necessity of such a procedure.

Dr. FOWLER.—The procedure followed by Dr. Wackerhagen was an eminently justifiable one, and follows out the line of all conservative operations in surgery, viz., to limit the removal to the diseased parts; it has certainly been an exemplification of the advantages of that line. I am inclined to think, however, that the term exsection or partial exsection of the ankle-joint is incorrect. It seems to me, from the appearances and from what the doctor has stated, that the shell of the lower extremity of the tibia was left intact. This being the case, the cartilaginous cover of that portion of the tibio-tarsal articulation was not removed, and the operation simply resolved itself into a removal of a diseased portion. I have had occasion in a number of instances to do this operation, a centre of necrosis being reached by chiseling away a portion of the inner surface of the tibia, and curetting the walls of the cavity; the cases have always done well. But in no case do I remember having opened the joint, nor did I consider the operation an excision or a partial excision of the ankle.

The excision of the cuboid for talipes varus, the operation of Davy, since its introduction in 1879 and up to within the last year, had steadily grown in favor. I have performed it a number of times, and have obtained some most excellent results. I have also seen some disagree-

able sequences to the operation, and it is only fair to say, perhaps, that these latter have been due to an inability or failure, on the part of patients, to carry, or persistently and systematically appropriate, orthopædic after-treatment. Cases of extreme talipes are always a bugbear to the surgeon; they require careful watching in the after-treatment, whether the excision of the cuboid is done or whether one or all of the operative procedures are carried out, and, unless the orthopædic after-treatment can be carried on intelligently, the results are not satisfactory. From my own experience with this and with the so-called Phelps' method, or that of open incision, I am constrained to believe that this latter method will succeed in a larger number of cases than any one operative procedure. I am well aware that it has been somewhat severely criticised, and a number of cases have been reported as relapsing after a year or more, but I believe that this is largely due to two things: first, the incompleteness of the operative procedure itself, and, secondly, to the failure to appreciate the necessity for a prolonged and careful orthopædic after-treatment.

Personally my best results have been obtained by the combination of the two methods, that of the excision of the cuboid and as much more of the corresponding row of tarsal bones as may seem necessary, in combination with the Phelps' incision upon the opposite side of the foot to bring the foot into its proper relations. Not only is it necessary to bring the foot in the normal position, but, in my experience, it is necessary to over-abduct and over-pronate the foot. Unless this be done and a sufficient amount of the bony structures removed to insure this, the concave appearance of the tibial side of the foot is quite marked. This is shown to be the case in the patient exhibited, and was due, perhaps, to the fact that the open incision upon the inner side of the foot was not practised when the cuboid was removed. Excision of the cuboid alone is not sufficient to restore the normal contour of the foot. To remove portions of the remaining tarsal bones in such a manner that the apex of the wedge stops short only of the soft tissues of the inner side of the foot, in my cases, has been the only certain method of operation.

In the final after-treatment, whether the Phelps' method or the Davy has been pursued, there is no method, to my mind, which so completely counteracts the tendency to rotation of the foot and leg inward as the application of the apparatus of Doyle, of Syracuse.

The experience at the Halle clinic, perhaps the best record of work in this direction published during the last ten years, shows that of the 156 cases of congenital club-foot, 58 were corrected by simple manipulation and the application of orthopædic apparatus. The remaining 98 only yielded after the application of different operative procedures, in

cluding 29 cases of extirpation of the bones of the tarsus to a greater or less extent, 24 cases in which Achillo-tenotomy, 8 tenotomies of the tibialis posticus alone, 8 tenotomies of these two last combined, and 21 operations after Phelps' (in 14 patients) were performed.

Since 1882 this last-mentioned operation has become the favorite method of procedure in those cases which refused to yield to orthopædic measures or tenotomy, and this has been mainly due to the facility which it affords for the immediate and permanent reduction of the foot, in the majority of cases.

Under proper antiseptic precautions and with a successful organization of a clot to fill in the gap left by a reduction of the deformity, prompt and complete healing takes place.

In several of my own cases, where the Phelps' incision was practised in conjunction with the wedge-shaped excision of the tarsus, the entire process of healing, both of the wound upon the outer side of the foot through which the cuboid and corresponding tarsal bones were removed, and the open deep incision upon the inner side of the foot made after the manner of Phelps, took place completely and entirely without the occurrence of suppuration.

To summarize my own experience in this matter, I would say that where the deformity is of the extreme variety, such as in the admirable case exhibited by Dr. Wackerhagen, excision of a sufficient amount of osseous tarsal tissues, joined with a complete division of the inside structure of the foot and a persistent carrying out of the after-treatment, will result in a large majority of cases in a useful foot.

I would particularly and emphatically reiterate the necessity for a watchful care over these cases, during the after-treatment, owing to the tendency, unless complete and permanent approximation of the bony structures constituting the walls of the gap left by the excision of the wedge-shaped portion is secured, to an excessive bony deposit, resulting from an attempt to fill in this gap. Once this is initiated, a progressive growth of the same occurs, and it will be found that, although the immediate result is apparently satisfactory, in a comparatively short time the new growth increases in size, and forces the foot into almost as well-marked a position of talipes as before the operation. The only safeguards against this unfortunate termination consists in practising, immediately following the tarsal excision, the open incision upon the inner side of the foot until the foot will almost fall into a position of over-correction of its own weight, and so arranging the lines of the excised wedge that no spaces are left between the surfaces of bone, when the foot is brought into position, for the reparative process to fill in with new osseous material.

Dr. RAND.—My experience in talipes varus and equino-varus, except in two instances, has been limited to cases under five years of age, and in none of these, some dozen or more, have I felt justified in recommending the operation of tarsotomy. The results obtained in all were fairly good, in a majority of them eminently so, by the usual operations of tenotomy, division of plantar fascia, etc., and the usual after-treatment. In two cases I did the so called syndesmotomy operation of Parker, dividing the so-called astragalo-scapoid capsule in the same incision by which I divided the tibial tendons. I believe that this operation offers, in some cases, a good substitute for tarsotomy.

The result in the case here presented seems to me to justify the operation on this patient at least; but, as Dr. Fowler has remarked, whatever operation the surgeon elects, as much, if not more depends upon the persistency with which the after-treatment is followed out, and my own experience has been more favorable in proportion to the intelligence and perseverance of the mother or nurse. In any of these cases whatever operation has been done, it is very easy for the child to suffer a relapse if the surgeon's directions are not precisely and patiently carried out by the attendant. And whatever retentive apparatus is used, much of the final success obtained depends upon massage, electricity, douching, and so on.

Dr. LEWIS.—It seems to me the doctor is to be congratulated on all the three cases. The thumb case is, to my mind, a beautiful example of conservative surgery.

In regard to the case of talipes, my experience is rather limited, and I have nothing to add to what has been said.

In regard to the first case, there are two points that strike me. I doubt if the doctor has got through with that case yet. It seems to me he is likely to have more trouble, and to have to operate on it again; it is impossible to say in how short a time. I notice another thing about the case, that is, the greater freedom of the other joints about the tarsus. The motion in the transverse tarsal articulation is markedly increased, to make up for what loss of freedom there is in the ankle-joint proper.

Dr. BURGE.—I have nothing to say beyond testifying to my interest in all these cases. Any remarks that I might make have been anticipated. I have no personal views to ventilate on the subject.

Dr. WIGHT.—I would say in reference to the subject of the second case, that for a number of years I have seen cases of talipes in quite young children among others, and whether before this society or somewhere else, I cannot now remember, but I have made a statement to this effect—I will not stop to relate cases, but simply make a general statement—that in certain cases I had forcibly overcome the deformity,

and the results, so far as I now remember, have been excellent in every case where I thoroughly overcame the deformity by manual forces. My attention was drawn to that question of operation by the extraordinary recovery of some cases of severe contusion of the foot and other structures, especially in children. And that bears strongly upon the question of mechanical treatment of these cases, which I am disposed to think is very much better than the operative in some respects. There are cases I think that require operation, and the statements of Dr. Fowler in the direction of operation are very appropriate. Now with reference to cases more advanced, that is, older patients, I have found a marked improvement by a long-continued course of mechanical appliances where the patients would not permit any osteotomy. It seems, while operative treatment is no doubt in order, that if a patient will not consent to that, a great change can be made in the formation of the foot, or rather the deformity can be greatly modified by long-continued mechanical appliances.

Now, with reference to the other cause. If the Chairman will permit me to be a little scientific, as I don't like to be always. The fact is that the thumb has three bones, the same as the fingers do, and the doctor has removed the middle thumb-bone instead of the first one. I need not go into arguments to prove that this is true, that the first bone of the thumb, as I call it, or the metacarpal bone, so erroneously called, is merely a thumb-bone every way you can look at it, structure, use and everything. There isn't any way of calling it a metacarpal bone, so the doctor has really removed the second bone of the thumb, and it is an admirable thing; I have never seen anything that pleased me more; I have sometimes taken off the end of the bone and made a new joint, but here we have an excellent thumb with good prehensile power with the middle bone of the thumb removed. All I can say to surgeons is, go and do likewise.

Dr. WACKERHAGEN.—I have nothing further to say excepting that I would like to correct one mistake. I think Dr. Fowler misunderstood the title of the first case. I did not entitle it as an exsection at all, but simply an operation at the ankle-joint for disease. With regard to the case of talipes varus, I would state I am continuing the after-treatment as often as I can get the patient brought to my office. Sometimes the mother will bring the boy three times a week, and again it is impossible to get the child for three weeks. I would state that the division of the anterior and posterior tibial tendons was an open incision instead of subcutaneous.

EXTIRPATION OF GOITRE.

Dr. PILCHER.—I present herewith, for the attention of the Society, two specimens of cystic degeneration of the thyroid gland, recently

removed by operation. They are both much shrunken by the escape of their contents. In both of the cases marked symptoms of dyspnœa had developed previous to operation, and in consequence of the development of this respiratory trouble the operations were sought and performed. The larger one was operated upon in February last, and the smaller one was removed by me this morning. In both of them the administration of the anæsthetic precipitated conditions of extreme dyspnœa that were so threatening in the first one that an incision of the trachea had to be made for its relief, and during the remainder of the operation the anæsthetic was administered through the tracheal opening. In the second one the dyspnœa was relieved after the incision of the deep fascia. Upon the incision of the deep fascia, so as to let up the pressure upon it, the improvement in the breathing was marked. In both of them on reaching the trachea, the occasion of the respiratory trouble was evident from the fact the trachea was compressed laterally into a scabbard-like form, so that the walls of the trachea were nearly in apposition. This was unexpectedly marked in the second case in which the enlargement affected chiefly the isthmus of the thyroid. I do not know that there is anything peculiar to speak of in reference to the technique of the operation that has not been traversed again and again in these operations except in this one thing, namely, that in the case where the trachea was opened, at the close of the operation I proceeded to suture the incision in the trachea, which I did by sutures placed in the peritracheal fascial sheath and then practically buried. They were sufficient to close the opening in the trachea, and union by first intention took place, and I had no further trouble in the after course of the wound, any more than if the trachea had not been opened at all. This is a course which is quite opposite to that which is generally expected in connection with these cases where the trachea is opened, one of the greatest misfortunes being recognized in such cases to be that of opening the trachea. In the first case, in which the tumor was a very large one affecting chiefly the right lobe and isthmus, I made a curved incision from opposite the cricoid cartilage downward, curving over to the right as far as to the middle of the clavicle, thus giving me a good exposure of the large tumor.

In the second case the incision which I made was a T-incision. A vertical incision was first made in the median line from the cricoid down; then a cross-incision was made at the upper end of this, so as to fully expose the lateral lobes.

Dr. WIGHT.—I would like to ask the doctor if that large tumor has been examined for carcinomatous proliferation?

Dr. PILCHER.—I do not remember whether I did or not; I think I did, but what the report was I do not remember now, though I do not

think it was indicative of malignant change at all. The woman got well; the course of healing was perfectly favorable.

Dr. WIGHT.—That would be a good sign of non-malignancy.

Dr. BURGE.—Does the patient continue well up to the present time?

Dr. PILCHER.—The last I heard of her she was about to become a mother.

Dr. WIGHT.—I would like to ask any member of the Society if they have any recent knowledge from any source as to the effect on the general health of the extirpation of the thyroid. I mean the entire gland.

Dr. FOWLER.—There has been a great deal written by the German and French writers upon myxœdema, particularly by Kocher and Reverdin on the condition resulting from the extirpation of the entire gland. This has been observed in a relatively large number of cases. More recently experiments have been instituted with a view of transplanting a portion of the removed thyroid in the peritoneal cavity, in order that it might assume any function it possessed prior to its removal from its normal location.

Dr. WIGHT.—Has that been performed on man?

Dr. FOWLER.—I think only upon the lower animals. I have no knowledge of any other experiments in this line.

The late Dr. Rockwell removed the thyroid in two cases at St. Mary's Hospital, and they both developed myxœdema; one I remember particularly, which was followed by a most peculiar idiotic appearance and condition.

Dr. PILCHER.—Are they living still?

Dr. FOWLER.—No, one died of the disease and the other one when last heard from was in a condition of extreme chlorosis; they were both females.

Dr. PILCHER.—In another case operated upon by the late Dr. Rockwell, a young man, although he recovered from the operation without an unpleasant symptom, in the course of a few months developed strange nervous symptoms, the greatest manifestations of which was gastric irritability, which occasioned his death after suffering a few weeks.

I want to say in connection with these two cases what I omitted to say before, that although in the first both lobes were enlarged (this is the right lobe which you see here), I removed a portion of the left lobe as well, but left the lower half of it, making the section with the thermocautery. In the second case the lateral lobes were not manifestly enlarged, somewhat enlarged, but not very greatly enlarged, so that both of these women have plenty of thyroid gland left. The method which has been advised by Socui, I think, of cutting into the gland and simply curetting it, as it were, has its applicability in many cases in which the degener-

ated portions can be turned right out and leave the healthy portions behind, so that total ablation of the gland is avoided. In other cases it has been advocated that we enucleate it to a great extent, and then put an elastic ligature around it, Esmarching it, as it were, and then incise it and curette it and pack it. A fair result thereafter may sometimes be obtained in this manner, although of course not with so pleasant and immediate a healing as when we were able to entirely remove everything and get healing by first intention. The possibility of subsequent cachexia strumipriva ought to be kept in mind always in attacks upon the thyroid gland.

We owe, perhaps, to the experimental researches of Prof. Horsley, of London, upon the results of the extirpation of the thyroid gland, performed upon monkeys and other animals, more of our knowledge of the results that ensue from the extirpation of the thyroid gland than even the large clinical experience of the German operators have given to us. The cases that come to operation in this country are comparatively infrequent, I think.

Dr. FOWLER.—I have operated three times for the removal of the thyroid, but not in any case for the complete removal. My first case was peculiar; the patient was suffering great dyspnoea, the disease was extensive and the patient well advanced in years. I removed the greater portion of the thyroid by the piecemeal method, with the object of removing the unhealthy portions and leaving the healthy portions behind, not in the way advocated by these operators, but by use of the thermo-cautery, grasping a piece of the gland-tissue and enucleate almost the entire gland. And the patient made a recovery, not rapid, because of the extensive cauterization of the parts, but an aseptic condition and a perfect result in the course of about six weeks, and the patient lived for at least five years afterwards, and died then of some acute disease, I think it was bronchitis.

Dr. RAND.—Was there any return of dyspnoea in that case?

Dr. FOWLER.—No, there was not. The gland was exposed, and removed piecemeal.

Dr. WIGHT.—It seems to me that this glandular tissue has some function in making some change, or supplying some element of blood for the purpose of continuing the organs in a healthy condition. And if that is so, then it is a very important question as to how far we should interfere with this plan, what we should do with it in case of disease. And a secondary thought that arises would be that we should not interfere with it unless some impending difficulty, serious to the life of the patient, arises at the time when any operation might be required. So in ordinary cases it would hardly be advisable to interfere.

In connection with that, I observed many years ago a patient who had a large goitre tending towards dyspnœa. I ordered half a grain iodide potassium three times a day. But in order to prevent iodism in the patient, I had to diminish that to a quarter or an eighth. But there is no doubt that this goitre was diminished in size. That patient is still alive and is now eighty five years of age. The goitre during the last ten or fifteen years has slowly atrophied, and there is very little of it left. If this patient had had an operation so many years ago and had had the thyroid gland removed, she would not have lived but a very few years or months at most. According to the best evidence we can get, she would have been relieved for the time being, but we saved the gland, saved that important element in the elaboration of the blood which is necessary for the physical health of the individual.

Dr. PILCHER.—Abundant experience has shown that if but a small portion of the gland is left, those unpleasant consequences are averted.

Dr. WIGHT.—If that is so, that of course would modify my statement.

Dr. FOWLER.—A few years ago I saw an account of the treatment of goitre in its incipency by the use of the method known as cathophorasis. It consisted in saturating the negative pole of a galvanic electrode with a solution of iodide of potassium, and placing it in contact with the tumor, the positive pole being placed upon the surface in the vicinity. I have treated several cases in this way, and in two instances the enlargement of the thyroid disappeared quite promptly. I will not undertake to say that the galvanism alone, or the iodide, or the combination of the two, or even that the treatment itself, had in any way to do with the result. I may say, however, in passing, that Wagner, as well as Corning, have succeeded in introducing solutions of cocaine in this manner. I mention this method of treating goitre only to ask if any of the gentleman present have any experience with the method, or know of any cases treated in a similar manner. My own were cases which yielded to no other medicinal treatment. I might supplement my remarks upon this method by saying that I have attempted in three other cases to obtain similar results, and have entirely failed in each case.

Several years ago I removed a large thyroid tumor by the method known as the "piecemeal" method of Hahn. In this case, however, instead of tearing out the nodules by means of the forceps, I utilized the thermo-cautery for the "piecemeal" part of the procedure. Ligation of all four of the arteries of supply preceded the operation. It was my intention to enucleate the growth entire in the ordinary way, but existence of particularly dense adhesions, and the unfavorable conditions of the patient, an old man, together with the occurrence of threatening symptoms while under the anæsthetic, impelled me after removing the ether-bottle and inhaler from the vicinity, to attack the growth in the manner mentioned. The case recovered without any untoward symptoms.

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EDITORIAL.

METHODIST EPISCOPAL HOSPITAL.

The Second Annual Report of this, one of the most creditable of Brooklyn's institutions, is exceedingly interesting and satisfactory. We have already had occasion to speak of the good work which is being done in this hospital, not only in the cause of humanity, but also in the cause of progressive medicine. We doubt if there is a hospital in Brooklyn in which the methods are more in accord with the most advanced ideas of modern surgeons and physicians than they are at the Methodist Episcopal Hospital. If any of our local medical institutions is superior in this respect, it is certainly unknown to the profession. We have already deplored the absence of published reports of the work of many of our hospitals, the effect of which is to largely cut off these institutions from both lay and professional sympathy, and, if the medical men connected with these institutions desire that their method be known to the profession at large, they should emulate the example of the staff of the Methodist Episcopal Hospital, and publish the work done by them. In the absence of any other channel for this communication, we freely offer the pages of the JOURNAL.

ST. PETER'S HOSPITAL.

The "New St. Peter's" was completed during the past year, and is now occupied by a considerable number of patients. Its formal opening took place January 11th. In a coming issue we shall give an account of this important addition to Brooklyn's charitable institutions, and a brief sketch of the Order of the Sisters of the Poor of St. Francis, under whose auspices it was built and is now maintained.

EXPERT TESTIMONY.

As announced, a special meeting for the consideration of the resolutions touching this subject was held at the Society Rooms on January 14th. The number of members present was small, owing to the prevalence of the "grip," which, being no respecter of persons, seized upon physicians as well as the laity. The subject was discussed freely and candidly by those present, and much that was of value was elicited. The presence of Justices Bartlett and Cullen added much to the interest of the meeting, and their contribution to the discussion was of great worth and was highly appreciated. Wisely, we think, no action was taken on the resolutions, but their further consideration was deferred until a fuller representation of the Society could pass upon the questions involved. After the publication of the stenographer's minutes of the meeting, the members will be better prepared to dispose of the resolutions finally.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

The Medical Society of the County of Kings was never more ably represented at Albany than at the recent annual meeting. The following papers, by members of the Society, were presented: "The Time Element in saving the Perinæum," by Robert L. Dickinson; "Remarks on the Use of the Uterine Curette," by Walter B. Chase; "An Original, Simple, and Effective Method for Treatment of Scabies," by Samuel Sherwell; "A Case of Uræmic Convulsion in a New-Born, with Recovery," by Alex. Hutchins; "Isolation of Consumptives," by Paul H. Kretzschmar; "The Prevention of Tubercular Laryngitis," by Benjamin F. Westbrook; "A Case of Papilloma of the Vocal Cords," by Chas. N. Cox; and "Naso-Pharyngeal Epithelioma," by Sidney Allan Fox. A. N. Bell was a member of the Committee on Hygiene, and A. Mathewson a member of the Committee on Ethics. The members present other than those who read papers, were A. Ross Matheson, F. E. West, L. S. Pilcher, Wm. Maddren, G. R. Fowler, G. A. Evans, C. E. De La Vergne, E. Palmer, and F. D. Bailey.

PROCEEDINGS OF SOCIETIES.

BROOKLYN MEDICAL MICROSCOPICAL SOCIETY.

The thirtieth regular meeting of this Society was held on February 5, 1890, at the Hoagland Laboratory, the President, Dr. C. Heitzmann, occupying the chair. Dr. L. F. Criado was proposed for membership and his name referred to the committee. A committee consisting of Drs. Fearn, Bates and Eccles was appointed by the President to nominate officers for the ensuing year. Dr. L. Heitzmann then read an interesting paper on "Bacteriological Examination as an Aid to Diagnosis," which was discussed by Drs. Kemp, Van Cott, Eccles, Fearn, Wilson, C. Heitzmann and the author.

At the next meeting on March 5, 1890, the annual election of officers will be held.

By order of the committee,

RICHMOND LENNOX, *Sec.*

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

LIGATURE OF THE FEMORAL VEIN BELOW POUPART'S LIGAMENT.

Koretzky, St. Petersburg (*Archiv. f. klinische Chirurg.*, Bd. 36). During an operation for the removal of glands the seat of carcinomatous infiltration, the femoral vein was wounded close to Poupart's ligament, and above the point of junction of the saphenous and internal circumflex veins at which point it was ligated. This patient recovered with no untoward symptoms. In another case, in which a ligature was applied at the same point, gangrene and death followed. In examining into the question, K. came to the conclusion that ligation at this point is not devoid of danger. His studies in a general way corroborate the well-known work of W. Braune. In addition, however, to the two venous circulations described by the latter, K. describes a third, which he denominates the sub-ischial.

In summing up, the author advises, in old persons, to resort to ligation of the external iliac vein, and in younger subjects, to close stab and gunshot wounds of the femoral vein below Poupart's ligament by means of an accurately applied suture to the vein.

THE AMERICAN METHOD OF OPERATION FOR CLUB-FOOT.

J. Noyon (Inaug.-Diss., Amsterdam). The results of twenty cases of pes varus by Tilanus, as reported from the Amsterdam clinic are given. This surgeon fearing that the invasion of the tarsal bones in the period of growth would disturb the process of development, performs excision of the cuboid only in the severest cases. Two cases are given, and show that this fear is well founded. A boy of about four years suffered from a right pes equinovarus in a high degree. The head of the talus had grown to such an extent, reposition was impossible; therefore it was removed. Reposition was now easily accomplished, and the little patient was discharged from the clinic, wearing Roser's apparatus. At the end of one and a half years the head of the talus had grown in such a manner that straightening of the foot was impossible. In a similar case, a boy of twelve years, the head of the talus and the anterior process of the os calcis were removed, which was followed by a return of the trouble in 1887. (Total extirpation of the talus would have prevented a relapse.) The great difficulties of the redressement force in older and severe cases led Tilanus to adopt Phelp's method, some points of which he modified. When necessary a large gaping wound is made; the plantar fascia was never divided subcutaneously, but the skin wound was lengthened from $1\frac{1}{2}$ to 6 cm. The plantar nerves and arteries were spared; the lateral interior ligament was partly cut through. The operation-wound remained open and was covered with a thin aseptic bandage; a plaster-of-Paris bandage applied to the foot. In from four to eight weeks the wounds in almost all of the cases were found to be healed by granulation. For the after-treatment Roser's apparatus, with or without a pelvic belt, was used. The twenty cases operated upon, including one of pes valgus, occurred in patients from sixteen months to twelve years. Most of the patients had already undergone either tenotomy or excision of the cuboid, with very little or no relief. From previous statistics it was found that usually a simple separation of the soft parts was sufficient for straightening the feet, and, after from 1 to $1\frac{1}{2}$ years, position and function of the feet were quite restored. In three cases an osteotomy was necessary. The opinion that the American method is quite liable to be followed by a relapse, was not corroborated, if care was taken in the orthopædic after-treatment.

THE OPERATIVE TREATMENT OF RECURVED OR HAMMER TOE.

F. Petersen, Kiel (*Archiv. f. klinische Chirg.*, Bd. 37, Heft 3). Amputation is quite generally advised and practised for this class of cases. P. has devised an operation similar in principle to Phelps' open incision for talipes. A transverse incision is made upon the concave side, corresponding to the first interphalangeal joint, if necessary, opening the joint capsule. The toe is then straightened, the wound gaping to the extent of 2 ctm., and a Schede dressing applied; healing is obtained by this means under a moist scab. The dressings, if all goes well, may be removed in about three weeks, when the toe is found to be in perfect position.



OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

PUERPERAL INFECTION.

Hegar (*Sammlung Klin. Vorträge*, No. 351) thinks the doctrine of so-called self-infection has not been proven. There is no conclusive evidence that puerperal infection may arise from micro-organisms having their habitat in the genital tract.

The genital germs are in general only putrefactive germs. Improvements upon the best results thus far attained by antiseptic practice in natural labors are to be reached only by less frequent vaginal examinations or by omitting them altogether.

ERGOT AS AN EXCITOR AND REGULATOR OF UTERINE CONTRACTIONS.

Schatz (*Nouv. Arch. d'ostet et de gyn.*, Nov., 1889). For establishing, regulating or sustaining uterine contractions, S. holds that ergot is superior to massage, electricity and all other agents which have been used for that purpose. From an experimental study of ergot as an oxytocic he submits the following conclusions:

1. The pains produced by ergot have the normal character. The belief that they are cramp-like is erroneous.
2. Ergot increases the frequency not the violence of the pains. Its administration should be managed with a view to obtain pains of normal frequency.

3. The effect of the drug is manifest in about fifteen minutes, and is complete in thirty minutes after its exhibition. The successive doses should be given at not less than hourly intervals. [Presumably small doses only are meant, *e. g.*, ℥ x of the fluid extract. J.]

STATISTICS OF THE PORRO OPERATION.

(R. P. Harris, Br. Med. Jour., Jan. 11, 1890.) This note presents a revised record of the Porro operation in all countries for thirteen years ending December 31, 1888. The total list numbers 264 cases. A growing improvement is noted in the results in all countries with the exception of France. Of the first 50 women out of the 264 cases, 30 died; of the last 50 but 10 were lost, a mortality of only 20 per cent. The total mortality from the operation was 117 deaths, of which 74 occurred in the first half of the total number of recorded cases, 43 in the last. Dr. H. thinks that with due care and skill at least 80 per cent. of cases should be saved. The recent results compare favorably with those of the improved Cæsarean section. [Up to October, 1889, five operations had been added to the Porro record with no addition to the number of recoveries. The recorded Porro cases as given by Dr. Harris, December 20, 1889, numbered 272, with 150 deaths; the Saenger operations, 212 with 50 deaths. J.]

PHTHISIS NOT AN INDICATION FOR ACCOUCHEMENT RAPIDE.

Dr. Wm. Duncan (Br. Med. Jour., Jan. 18, 1890), in a paper read before the Obstetrical Society of London, advocated the practice of induced abortion in pregnancy complicated with progressive phthisis, and reported a case in which he had operated. When the patient was seen for the first time in the latter months, he advised artificial premature labor in case of marked phthisis. These views were based upon his belief that the progress of phthisis was hastened during gestation. The paper was discussed by a large number of the prominent obstetricians of London, every one of whom condemned the practice as unjustifiable. That the progress of phthisis is accelerated by pregnancy has not been proven. Lactation, however, affects it unfavorably and it is this which should be suppressed.

RUPTURE OF THE UTERUS.

Wiedow (Nouv. Arch. d'obstet. et de gyn., Nov., 1889) reports a case of rupture of the uterus in a iv. para, due to hydrocephalus; child extruded into the peritoneum, placenta expelled per vias naturales. Laparotomy eighteen hours after rupture. The tear extended from the fundus through the neck of the uterus, and split the posterior layer of the broad ligament. The elastic ligature was applied to the cervix, the

broad ligament was sutured, its cavity drained into the vagina with iodoform gauze, and the uterus amputated. The peritoneum was flushed with boiled water. The stump was stitched in the lower angle of the abdominal wound. Recovery.

PUERPERAL FEVER.

Widal (Br. Med. Jour., Dec. 28, 1889) believes puerperal infection to be produced by the streptococcus pyogenes entering the animal economy by first lodging in the ulcerated uterine mucous membrane. The diffusion of the micro-organisms by the uterine vessels explains the distribution of this affection in various organs.

W. has observed that the false membrane sometimes found in puerperal fever has no analogy to the false membrane of diphtheria. The false membrane of puerperal fever and the pus of abscesses are of the same origin, and are produced by the streptococcus pyogenes. He finds the streptococcus pyogenes in the endothelium of the affected veins in phlegmasia alba dolens. This is the origin of the affection, the formation of clot being secondary.

The streptococcus of erysipelatous dermatitis produces the suppuration of phlegmonous erysipelas and that from puerperal discharges causes erysipelatous dermatitis as does that from an erysipelatous patch.

TREATMENT OF PLACENTA PRÆVIA.

(Br. Med. Jour., Nov. 30, 1889.) Dr. Braxton Hicks submits the following rules among others for the treatment of placenta prævia :

Induce labor immediately on making the diagnosis of placenta prævia. (After the period of viability. J.)

If the os be fully expanded and the placenta marginal rupture the membranes and wait. Employ forceps or version in failure of the expelling powers.

If the os be small, separate the placenta from the lower segment and be guided by the subsequent indications.

If the practitioner elects to follow a routine method in all cases, version by the combined method, no force following, gives as good results as any.

Dr. Murphy presented a table of 38 cases, with but two deaths. He advocated the induction of labor in any case after the seventh month, and in the event of much bleeding, earlier. His chief reliance is bipolar version.

Lomer has treated 28 cases, losing but one. One hundred and ninety cases had been treated in Germany by Braxton Hicks' method (bipolar version) with but nine deaths. Dr. L.'s rule is to turn and

then wait. Slight traction may be called for to control hæmorrhage, but hastened extraction is unnecessary and pernicious.

NITRITE OF AMYL IN HEART DISEASE COMPLICATING LABOR.

W. F. Wright (Ed. Med. Jour., Dec., 1889) reports a case of labor complicated with mitral stenosis, incompetence and aortic regurgitation. At the close of the third stage the woman was seized with extreme dyspnœa and hæmoptysis and became deeply cyanosed. Instead of venesection the doctor bled the patient into her own vessels by administering five or six drops of nitrite of amyl by inhalation. The result was immediate relief of all the symptoms with ultimate recovery.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M.D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital : Physician to the Department of the Chest, Brooklyn City Dispensary.

THE USE OF SULPHONAL.

Field (Therapeutic Gazette, Sept., 1889), after experimenting with the remedy in 200 cases, believes it stands first in the list of the hypnotics. The failures to obtain success will be few, if certain rules are observed. It is considered essential to bear in mind the following :

1. Time of administration.
2. Method of administration.
3. The dose.

Sulphonal requires from one to two hours before its action becomes manifested. It should not be given when the digestive process is in full activity. *The dose should be taken one or two hours before retiring.* The patient should not prepare for sleeping until a feeling of drowsiness is experienced. The drug should always be given in *finely divided powder*. Mechanical irritation from the coarse grains may produce enuresis. These grains are less soluble in the stomach. Tablets of the compressed drug should not be used. Five grains in powder produced the same effect as fifteen grains in the tablet form. It should not be given in milk or water, as its imperfect solubility will cause some of the crystals to adhere to the sides of the glass, preventing the patient from receiving the full dose. It may be used in wafer or merely placed upon the tongue. Rectal administration produces same results.

After continued use of the drug the author finds that the dose may be decreased. The patient who has used it night after night will require his large doses at first; later on a small dose will answer. If a dose of fifteen grains be first given, after a time five grains will be found to produce sleep. The drug, from these observations, was rarely at fault in producing sleep, but it was noticed that if the dose were too large, or if the sleep were interrupted, a feeling of languor, drowsiness and physical weakness was experienced the next day. A small dose will produce sleep, and its effect will be spent upon waking. The sleep is refreshing and never depresses. The nerves and circulatory systems are not objectionably affected.

Age and idiosyncrasy may sometimes cause the non-action of the drug. In children gastric disturbance always prevents its action. Senile organic change causes non-action; also profound mental disturbance. If, after the repeated administration of doses, varying from ten to twenty grains, observing the rules above given, the drug does not produce sleep, some idiosyncrasy must be suspected.

The author believes that the drug is curative, and mentions a case where it was used for months, producing sleep during the course of the treatment. Upon omitting the drug, normal sleep followed without interruption.

Sulphonal should never be given in more than ten-grain doses, as a rule. Fifteen grains are sometimes used. Twenty grains is the maximum dose, and should not be exceeded. It is a perfect hypnotic, because, although the means is artificial, the result is physiological.

CHLORALAMID.

(Therapeutic Gazette). Chloralamid is a combination of chloral and formamide. It comes in colorless crystals, having a bitter taste, being soluble in ten parts cold water and in one part alcohol. It is more freely soluble in warm water under 140° F. Excess of temperature causes separation of the ingredients.

It may be given in wine, water, or capsule.

The dose is from twenty to forty grains.

It produces sleep in twenty-five to thirty minutes. The sleep lasts from six to eight hours.

The indications for its use are:

Nervous excitement.

Neurasthenia.

Insomnia in heart or lung disease.

It does not act where the insomnia is accompanied by severe pain or mental disturbance.

EXALGINE.

(Therapeutic Gazette). From various papers on exalgine the following conclusions as to its action may be given :

1. The dose is from two to five grains every three or four hours.
2. It reduces neuralgic and muscular pains.
3. It is not poisonous and produces no depression.
4. It is a non-irritant.
5. It tends to reduce and prevent convulsive movements.

PHENACETINE IN PERTUSSIS.

Heinman (Journal de Medicine, July, 1889) writes of the value of the above remedy in producing a calming effect upon the nervous system and its action in restraining spasmodic action, nervous or muscular. In pertussis it had no action whatever on the duration of the disease, but seemed perceptibly to lessen the frequency of the paroxysms of coughing. This was conclusively proved in several cases in which, upon omitting giving the medicine, the child immediately had a return of violent fits of coughing, which were again held in check by exhibiting phenacetine.

Six grains may be given to a child three years of age in divided doses.

 PREVENTIVE MEDICINE.

 BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

COUNTRY WELL WATERS.

Dr. Joseph F. Edwards (Annals of Hygiene, Oct., 1889) relates the following fact in relation to the pollution of wells by cess-pools: "We have two wells, the one 14 feet lower than the other and 273 feet away from it; yet when we pump the water from the upper well, we decidedly lower the water in the other." The lower well is 21 feet deep and the upper one 27 feet. The bottom of the former is 8 feet below that of the latter. These facts are mentioned to show that underground currents cannot be determined by the configuration of the surface, and that a well on a higher surface level may be contaminated by a cess-pool situated on lower ground and nearly 300 feet away. He says: "This circumstance makes us feel absolutely convinced that the cess-pool must go; with this instance ever before us we could never feel, with absolute certainty, that any well was abso-

lutely free from danger of contamination, no matter how wisely nor how intelligently the well and cess-pool might be relatively located. We feel that the only way to protect our water wells from fæcal defilement is to keep fæcal matter out of the soil."

SIMPLE TESTS FOR WATER.

It is unfortunate that we have no simple reliable tests for the purity of drinking water. There are certain tests, however, which have a certain amount of value. The following is Hager's test:

"Pour one tablespoonful of a clear solution of tannin (a heaping teaspoonful of tannin to a gill of rain water) into a tumblerful of the suspected water. If no turbidity occurs within five hours, the water is good; if turbidity occurs within one hour, the water is decidedly unwholesome."

Negative results by this test should not be regarded as conclusive, but positive results should lead us to refrain from using the water for drinking purposes. The turbidity depends upon the precipitation of albuminoid matters by the tannin.

Heisch's sugar test is as follows:

A four-ounce bottle is thoroughly cleaned and rinsed with the water to be tested, and then filled. About ten grains of pure crystallized cane sugar (rock candy) is added, the stopper inserted, and the bottle placed in a strong light at a temperature of about 80° F. After several hours the water is examined in a good side light with a dark background for any turbidity. The turbidity is due to the growth of a fungus, which Heisch believed to be peculiar to sewage. If examined under a power of 250 diameters it is found to consist of spherical cells, having in most cases a bright nucleus.

Another method is as follows:

To a four-ounce bottle of the suspected water, add 3 ss. of a one-per-cent solution of silver nitrate rendered decidedly alkaline with ammonium hydrate (aqua ammoniæ), and place in a strong light for two hours. Waters containing organic matter turn dark, while those containing little or none show no appreciable tint at the end of two hours. Badly contaminated well waters will show a deep brown to black color.

Dr. F. De Chaumont gives the following tests, based upon the color produced on heating the residue left on evaporating a portion of the water. The evaporation may be conducted in a saucer, on an ordinary stove. On heating the dry residue to the charring point, it scarcely blackens in pure waters.

In suspicious waters there is much blackening. In bad waters there is much blackening, and nitrous fumes are given off, or there is a smell of burnt horn.

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital; Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

EXPERIMENTS ON THE ENCYSTING OF FOREIGN BODIES.

Felix Marchand (Ziegler u. Hauwerck's Beiträge zur patholog. Anatomie, Bd. IV., Hft. 1).

The author experimented with pieces of sponge, hardened injected lung, hardened liver, cork, and elder-pith, which he inserted into the peritoneal cavities of animals, principally guinea-pigs.

The results of his numerous experiments regarding the tissue-area in which the bodies were encysted are as follows: Infiltration of leucocytes always formed the commencement of the process. These are both mono- and multinuclear. In the interior of the foreign body the multinuclear cells grow progressively fewer, or are absent altogether. Author believes both varieties of cells to be genetically related—the mono-nuclear being an earlier and the multinuclear a later stage in the life-history of the cells.

The nuclear division, particularly when accompanied with division of cell-protoplasm, he regards as a retrograde metamorphosis, and further says that subdivision of equally active cells ensues only in the direction of mitosis.

A portion of the leucocytes which have gained entrance into the foreign body may again wander out into the lymph-stream; the remainder degenerate inside of it, and probably play an important role in the course of their degeneration in the formation of fibrin in and the fixation of the foreign body.

He regards the formation of granulation, or young connective tissue as the work exclusively of pre-existing connective-tissue cells. This formation always commences at the periphery of the tissue, and extends to the point at which the foreign body is bound to the surrounding tissue.

Synchronously with the appearance of young granulation-cells are to be found in the bordering tissues numberless nuclear figures (karyokinesis). The same may be seen in the interior of the foreign body always, and mostly in direct connection with the advancing granulation-cells.

The form of the new granulation-cells may be very various; they doubtless possess capacity for contraction and locomotion. The endo-

thelial cells appear to take the most active part in forming new cells; but the other tissue-cells also participate in the process. Cell-growth does not begin before the end of the first day.

As is already known, the formation of young blood-vessels proceeds from the older vessels in the surrounding tissues. The infiltration of young cells into the foreign body precedes and is entirely independent of the formation of vessels.

In the giant-cells, which were commonly found in the neighborhood of the foreign body, the author could find neither fragmentation nor mitosis of the nuclei. On the contrary, he believes the giant-cells to be the direct result of fusion of the young new-formed cells. Leucocytes were very commonly found in the giant-cells.

M.'s experiments result in the conclusion that the giant-cells in the foreign body arise from elements in the surrounding tissues, which, in conjunction with leucocytes, coalesce to form multinuclear masses of protoplasm.

SUR LA DIGESTION GASTRIQUE DANS LE COURS DES MALADIES CHRONIQUES
DES VOIES RESPIRATOIRES.

Chelmouski (*Revue de Méd.*, 1889, No. 7). C. examines the gastric juice of patients suffering with phthisis, emphysema, and chronic bronchitis, all without fever, after the experimental meal of Riegel and the experimental breakfast of Gunzberg, with the following results:

In eleven phthisical patients, reaction of the gastric juice was always acid; in eight of these hydrochloric acid was always absent; in the three others there was an insignificant amount of peptone present. The gastric juice of five of the first, after being sufficiently acidulated, did not digest at all after many days; that of the three others, with hydrochloric acid, not before the lapse of twelve hours. In five of the eleven patients, digestion was good; two with dyspnœa had, after seven hours, undigested food still in the stomach. The resorption-capacity of the stomach was insufficient in all of them.

Fifteen patients with emphysema and chronic bronchitis had no hydrochloric acid in their gastric juice. In two of these C. found, after improvement of dyspnœa and bronchitis, a normal gastric juice, while the others behaved in a manner similar to the phthisical patients. C. regards the alteration in the composition of the gastric juice of the phthisical patients as due in part to gastric anæmia, going hand in hand with the general cachexia, partly to endarteritis fibrosa chronica, partly passive hyperæmia, and less often amyloid degeneration of the arteries of the gastric mucosa. In emphysema, chronic passive hyperæmia he regards as the cause of gastric disturbance.

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital. Curator and Microscopist, New York Eye and Ear Infirmary.

OCULAR LEPROSY.

Lopez (Knapp's Arch. of Oph., 1889, p. 404), after a brief statement of the chronic nature and parasitic origin of leprosy, gives a very careful enumeration of its effects on the eye and its adnexa. Any part of the eye may be affected, either from a development of the leprosy tubercles or (in the case of the external and exposed parts) from mechanical or other injury the result of the leprosy anæsthesia or the ectropion which so often attends ocular leprosy. As the leprosy manifestations generally commence in superficial regions and later invade the deeper tissues, sight is, as a rule, unaltered until visible lesions have made their appearance. The course of the disease is essentially chronic, and the symptoms of the various ocular manifestations are practically the same as the symptoms of similar conditions due to other causes. In treatment the object must be to avoid, or at most, delay the extension of the disease to the organ of sight, careful protection of the eyes from all mechanical irritants being especially indicated. Ectropion should therefore be promptly corrected, and one need not fear operation, as wounds in lepers heal readily. It seems impossible to arrest the development of a leproma which has invaded the eyeball, but the author believes that cauterization of the tubercle can retard its progress. Locally, antiseptic solutions should be freely used, and such treatment adopted as would ordinarily be indicated in a non-leprosy subject. At best we can obtain but improvement, as we have no agent that is to leprosy what mercury is to syphilis.

NERVE TERMINATIONS IN THE CORNEA.

The ordinary descriptions of the terminal nerves of the cornea are that from the more superficial nerve networks in the substantia propria corneæ branches (*rami perforantes*) pass more or less obliquely outward toward the epithelium to form what is known as the subepithelial plexus, from which again delicate filaments pass between the deeper epithelial cells to form in the superficial layers of epithelium the intra-epithelial plexus. From this point opinions vary, some claiming that the nerve fibres terminate by free or club-shaped extremities; others, that they terminate in a network of delicate varicose fibrillæ between the epithelial cells, this appearance, however, not extending over a

very large surface. In the substantia propria corneæ it is claimed that the nerves end free, or are connected with the protoplasm of the corneal cells.

Brand (Knapp's Arch. of Oph., 1889, p. 456), in agreement with Goldscheider, who stated in 1886 that all apparent terminations of nerves in epithelium are merely a self-deception, claims that there is no subepithelial or intra-epithelial plexus, but that the so-called rami-perforantes are really the final terminations of the corneal nerves and support the terminal nerve organs. These terminal organs are club-shaped, either single or with two or more horn-like prolongations, and though varying in shape in different individuals or even in the same eye do not rise above the corneal stroma. All of the terminal corpuscles have a sheath-like envelope, the prolongation of the nerve-sheath. Brand has not been able to demonstrate any connection between the nerve fibres in the substantia propria and the corneal corpuscles.

ON THE RECUPERATION OF THE RETINA.

It is a well recognized fact that in common with other parts of the body the retina tires with use. Nevertheless there is but slight difference in the visual power at the beginning and end of a long day's work, and the oculist makes no allowance for the time of day at which his tests for visual acuity are made. This necessary and rapid recuperation of the retina is usually accounted for by the fact that as the retina is constantly receiving new impressions, a constantly changing set of nervous elements is being acted on by the light, and each has, as it were, a chance to rest before its turn for work comes round again. Ocular movements would of course favor this end. At the last meeting of the Heidelberg Ophthal. Society, Fick and Guertner (Bericht u. d. 20te Versammlung d. Ophthal. Gesellsh.-Heidelberg) demonstrated however by a number of ingenious experiments, which it would take too much space to detail here, that the ordinarily accepted view is only partially correct, and that the retinal activity is restored by the movements of the eyeballs and of the lids and by the exercise of the accommodation, all acting through the alteration in ocular tension, and therefore in retinal circulation which they produce. As to the exact mechanism of this production, whether by the bringing of fresh nutritive (?) material or the removal of effete matter, no positive statements could be made.

RECURRENT VITREOUS HÆMORRHAGES.

Mayweg (Bericht u. d. 20te Versamm. d. ophthal. Gesell. Heidelberg) describes a case of this sort in which, after ten relapses, symptoms appeared after which rendered the loss of the right eye imminent, the left having

been already lost from the same cause. All medicinal and dietetic treatment proved unavailing, and finally the common carotid of the right side was tied, with the result that after a year and a half the vitreous was clear and V. $\frac{20}{10}$. Certainly one would hesitate to adopt such heroic treatment on the strength of a single case.

VISIBLE PULSE IN THE RETINAL ARTERIES.

Rachlmann (*Klin. Monatsblætter f. Augenheil.*, Jan., 1890) makes a distinction between the variations in arterial calibre due to actual or relative increase of ocular tension, as in glaucoma or when pressure is made on the eyeball, and those due to an increased range of the normal pulse-wave which ordinarily cannot be seen in vessels as small as the central artery of the retina. In the former condition the intraocular exceeds the arterial tension, and only during the arterial diastole does the blood enter the eye, the arteries then collapsing. This is then rather an intermittent circulation than a pulsation. When, however, the average arterial tension exceeds the intraocular, blood continues to enter the eye even during the arterial systole, a true pulse-wave being visible during arterial diastole. This is often accompanied by an apparent locomotion of the arteries, particularly noticeable where they are naturally somewhat tortuous. The author claims that retinal arterial pulsation is relatively seldom the result of local ocular affections (actual or relative increase of intraocular tension), and that it usually indicates a diseased condition of the circulation.



DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital;
Assistant Physician, Brooklyn Throat and Nose Hospital.

ANOSMIA.

J. Dundas Grant (*Journal Laryngol. and Rhinol*, vol. ii, No. 12). Smell must be distinguished from the sensation produced by the contact of pungent or irritating vapors with the Schneiderian membrane, which affects the domain of the fifth nerve. In disease of the fifth nerve irritant vapors are not perceived, though perfumes may be perfectly distinguished; but in disease of the olfactory nerve the contrary is the case. Whatever it be that issues from the odorous substance, it

must come in direct contact with the olfactory portion of the nasal mucous membrane. The character of a smell is pronounced in proportion to the height of the specific gravity of that substance, and as the vibrations of the particles are slow in proportion as the specific gravity is high, there is strong evidence that excitation of the olfactory nerve endings is brought about by vibrations of the particles of the odorous substance; it is obvious, therefore, that anything interfering with the access of vapors to the upper part of the nasal cavity, namely, the surfaces of the upper and middle turbinated bodies, and roof of the nose, where the olfactory nerve fibres are distributed, will interfere with the sense of smell. Of such causes of obstruction none are more potent than nasal polypi. They project very frequently from the under surface of the middle turbinated bones, and tend thus to occlude the passage between those bones and the septum, as well as to encroach upon the upper part of the vestibule, so as to prevent the access of vapor to the olfactory region. Chronic hypertrophic rhinitis is less frequently associated with anosmia, as it tends less to occlude this passage. The middle turbinated bones may be considerably hypertrophied without inducing this effect. Marked deviations of the septum, especially the vertical form, contribute largely to this result, as may also general swelling of the mucous membrane in ordinary cold in the head. Anosmia is caused commonly by atrophic rhinitis, producing abnormal condition of the epithelial covering. Pigment in the cells is essential to olfaction. In congenital anosmia the mucous membrane shows marked palor, and section of olfactory nerve arrests development of pigment.

The centre of smell may be seat of conditions leading to anosmia. This has been experimentally localized to the anterior part of uncinate or hippocampal convolution, softening or neoplasms of this locality result in loss of sense of smell. In diagnosis, the activity of the sense must be tested by means of irritating perfumes familiar to patient. Loss of smell without impairment of taste for flavors (as distinguished from taste proper) indicates nasal obstruction. The prognosis depends obviously upon possibility of removing cause; but the question still remains how long a nerve may remain functionally inactive without undergoing permanent degeneration. Sir Morrell Mackenzie thinks two years the greatest time compatible for recovery. In treating the causes of obstruction the electrolytic current had brought about a lasting diminution of the swellings and a restoration of the sense. For anosmia of functional or neurotic origin the remedy of most value is strychnia, administered internally.

THE ACTION OF CAUSTICS ON NASAL MUCOUS MEMBRANE.

Francke H. Bosworth (*Jour. Lar. and Rhinol.*, vol. ii., No. 4). In hypertrophic rhinitis the epithelial layer is not affected; the submucosa suffers only a slight dilatation of its blood-vessels. But in the deeper or cavernous layer the important changes take place; there is a dilatation of venous sinuses, increased blood supply, hypernutrition, and a consequent increase of all the elements of the intervenous connective-tissue.

Hypertrophy does not lead to increased secretion. The venous sinuses should normally pour into the nasal cavities about sixteen ounces of clear serum daily, in order to moisten the air before entering the lungs. If the nasal walls become thickened the secretion becomes viscid and irritating. It is necessary, then, not to destroy tissue, but simply to constrict the blood-vessels, diminish nutrition, and thus counteract hypertrophy. Destructive agents as commonly applied to the nasal mucous membrane causes only necrosis of the superficial epithelium and to a slight degree of the submucosa, leaving the cavernous layer, which is chiefly concerned, unaffected.

The proper procedure is to cocaine to deplete the vessels by diminishing their calibre; then by applying caustic to the most prominent points, to pin down this already contracted tissue, maintain thus the narrowed vessels until they can regain their normal tonicity, and in this way control nutrition.

ANTIPYRINE IN THE NASAL PASSAGES.

F. W. Hinkel (*N. Y. Med. Jour.*, 1888). 1. A solution of antipyrine possesses hæmostatic properties when sprayed in the nose, though not superior to cocaine.

2. Antipyrine in four-per-cent. solution upon nasal mucous membrane gives temporary relief to occlusion from engorgement of turbinates, and acts as sedative in irritable states.

3. It presents an advantage over cocaine in not producing local numbness, dryness, or general stimulation.

4. Antipyrine causes smarting and burning sensations in nose, with reflex pain in eyes or temples, passing off in a few seconds.

5. Its antiseptic and stimulant properties make it serviceable as an application to fresh wounds and to granulations and ulcerations in the nasal chambers.

6. Combined with cocaine, it increases the local action of the latter, enabling it to be used in a weaker solution.

PERSISTENCE OF PHONETIC TROUBLES AFTER ABLATION OF ADENOID
VEGETATIONS.

Cartaz (*Archives de Laryngologie*, 1887). Obstruction of pharyngo-nasal cavity results in greatly diminished resonance of voice, the timbre becoming muffled and veiled. Clear enunciation of nasal sounds are prevented, the "M's" and "N's" are transformed into "B." These troubles in speech generally disappear at once when the pharyngo nasal cavity is restored to its normal calibre by removal of the vegetations. Cartaz notes two cases in which the nasal twang persisted. These phenomena are caused by a paresis, a defect of accommodation of the arch of the palate, through its prolonged inaction due to the presence of the tumor. These troubles are similar to those occasioned by fissure of the arch of vault of the palate, and a supplementary education becomes necessary to remedy the imperfections of speech.

Cartaz, in cases of adenoid vegetations, insists on utility of reading aloud, articulating each syllable distinctly and emphasizing each word; also recommends teaching by the Solfeggi, holding each note for some time, and, finally, electrization of the arch may produce good results. (*Jour. Lar. and Rhinol.*, vol. ii., No. 4.)

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

SANITARIA FOR TUBERCULOUS CHILDREN.

Dr. Léon Petit (*Journal d'hygiène*, Sept. 5, 1889) tells of the interest of a number of prominent French physicians in the establishment of sanatoria for the free treatment of poor children. Nine years ago the hospital of Villepinte was established for tuberculous young girls. Nowtit has more than 200 beds. Later the Armesson Hospital with 40 beds was opened for boys. The Association has been offered a large tract of land on the Mediterranean, in a pine forest at the base of the Esteral Mountains, for the use of a convalescent sanitarium. Dr. Petit recommends the establishment of sanitary colonies for those benefitted by the sanatoria, as life in cities is dangerous and out-door life may at least keep tuberculous conditions latent.

LEAD POISONING IN CHILDREN.

John Brown, M.D., D. S. Sci. Medical Officer of Health. *Bacup*. (*British Medical Journal*, Jan. 25, 1890). After calling attention to the few recorded cases of this disease, the writer says: "I am not

aware that the blue line in the gums has been observed in children during the first dentition; when present it is a pathognomonic symptom of plumbism. Its absence does not prove the contrary. In children tartar is rarely present compared with adults. This is the reason why the blue line is so seldom found in children. I have notes of four children under five years in whom the blue line was present; also eighteen over five and under ten years; total under ten years twenty-two; ten and under fifteen years, twenty cases. Besides these forty-two in which the blue line was present, there were others who were suffering from plumbism in whom no blue line could be found, because the teeth were kept free from tartar. . . . In adults the blue line is most commonly observed in the gums of the incisors and molars. In children the gums of the incisors are often free, but the blue line may be observed on the gums of the molars. It is often associated with a peculiar form of caries, which attacks the crowns of the molar teeth at their junction with the fang. The surface or cusps of the teeth are sound; there is a cavity, about two millimeters in diameter, which affords a nidus for food to lodge in. The food is decomposed, probably by saprophytes, and sulphuretted hydrogen is found, which combines with the albuminate of lead, and is deposited as the sulphide in the capillaries of the papillæ of the gums. . . . Children are not so susceptible to the toxic influences of lead as persons between the ages of fifteen and fifty years. . . . The chief symptoms of plumbism in children are constipation, colic, frontal headache, anæmia, absence of the knee-jerk—this is not constant. In one case it was excessive. Usually the symptoms are so slight that they may easily be overlooked. Anæmia is the most common symptom and is generally well marked."

MITRAL STENOSIS IN CHILDREN.

Paper read by Dr. Sanson before Medical Society of London, Dec. 23, 1889. (*British Medical Journal*, Jan. 4, 1890). The paper was based on forty cases clinically observed and nineteen post-mortem examinations, all in children of twelve years and under.

The writer states that the stenosis is caused by a ring of granulations around the mitral aperture on its auricular aspect, friable masses or fibrous and firmly fixed. The subjacent structures formed a thickened ring, and sometimes the thickening involved curtains, cords and columns of the mitral valve. "Funnel-formed" stenosis is more common than the "button-hole" variety. The left auricle was often greatly hypertrophied or dilated. The left ventricle was usually of normal or subnormal dimensions. When enlarged was usually associated with general hypertrophy of the heart and pericarditis. The right

chambers are almost invariably dilated. The writer believed that mitral stenosis was not a congenital malformation; that it was rare under five years, and may be considered as invariably the result of endocarditis. Clinical cases generally showed a strong association with rheumatism, occasionally not, but due to protracted malnutrition, or a sudden lesion of the nervous system, fright, terror. Probably a temporary arrest of the heart's action is followed by a violent palpitation, and in the distorted condition of blood-pressure violence might be done to the delicate valve structures of the child.

CLASSIFICATION AND NOMENCLATURE OF THE DIARRHŒAL DISEASES OF
INFANCY FROM A STUDY OF THE LESIONS.

L. Emmett Holt, M.D. (New York Med. Jour., Jan. 18, 1890). This classification is a provisional one, and is based by the writer on the clinical and post-mortem study of seventy fatal cases at the New York Infant Asylum, together with a comparison of 1,500 non-fatal cases of diarrhœa in children.

<i>Clinical.</i>	<i>Pathological.</i>
I. Simple diarrhœa.....	No lesions.
II. Acute myotic diarrhœa.	
a. Acute dyspepsia	Acute desquamative catarrh.
b. Cholera infantum.	
III. Acute entero-colitis.	<div> <div> 1. Catarrhal. 2. Croupous. 3. Follicular ulceration. </div> <div>....Ulceration of lymph nodules.</div> </div>
IV. Chronic dyspeptic diarrhœa.	Hyperplasia of lymph nodules or no lesions.
V. Chronic entero-colitis.	1. Chronic catarrhal inflammation. 2. Follicular ulceration.

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

ON THE USE OF ICHTHYOL INTERNALLY.

(Unna, Monatshft. f. prakt. Derm., Bd. 9, Heft 12, p. 586, Dec., 1889.)

In answer to a formal request from a professional colleague, "Unna," of Hamburg, formulates his ideas of the use of ichthyol internally thus, though at greater length:

He states that his experience of its use now extends over seven years, for five of which he has used it internally, of course that this has been, from the nature of things, mostly where diseases have been connected with those of the skin; nevertheless there are numerous and certain indications for its use without other complications. He would insist upon the merits of the remedy, and his experience, as recommendations to its further and extended use.

In order to better study its action and effect, he begs to divide the affections in which its use is to be considered into two groups:

1. The diseases of single organs or systems.
2. Those concomitant with other affections or diseases.

In the first category he gives, as a type, diseases of the peripheral circulatory system. He says that in numberless cases of seborrhœa and seborrhœal eczema of the head and face in the female sex, we find some of the following symptoms, which are caused by anomalies of the circulatory system, such as pallor of skin, lips, and conjunctivæ; the middle of the face in seborrhœal condition; hemicrania, especially in temporal region; pains in back, etc.—more at menstrual period, and that period itself abnormal; perhaps amenorrhœa present; constipation; want of appetite; bad digestion; palpitation of heart; general languor; and sodden sleep, followed by exhaustion, instead of rest. In some of the cases perhaps all these symptoms may not be present, but they frequently are; and in these he strongly recommends the use of the remedy, for months, or even years, as not only tending to cure the tendency to the skin trouble, but as tending also to make the patients changed and healthier individuals in every way. He is frequently asked by his female patients to give them those drops again which used to do them so much good.

Another type of disease in which its use is highly beneficial is in the rosaceas of old people (usually masculine), of thick-set build, who are high livers, of sedentary habits, and fond of alcoholics—the people, in fact, having a tendency to hyperæmic condition generally, having also enlarged livers, chronic pharyngitis, catarrh of the bronchi, etc. Here again he claims that ichthyol plays a great role.

Next, in the same order, a long list of diseases of the digestive tract, and says that it has often come under his observation, and that of others, that benefit has resulted while employing on such the internal use of ichthyol; he thinks here also its action is by its beneficial influence on the circulatory anomalies of these portions of the economy. He finds fault with observers generally, in clinics having these classes of diseases to treat particularly, for not making more use of his experience and dicta. Recommends it as a wonderful remedy in lithiasic diatheses, and those whose emunctories are not in good condition, and

says that by its use a patient can be often spared an annual visit to Carlsbad, etc.

Thirdly, in same order, he goes on to discuss diseases of the respiratory system, either with or without concomitant skin affections, and says that, in the treatment of the nose and upper air-passages with ichthyol locally, he has had wonderful results, and the beneficial effects thereof have often led him to its internal use in cases of bronchial asthma and the like; and that here also great and good results have been obtained. Mentions the cases of three patients, with whom nothing else than potass. iod., in great dose, had had any effect, but who, from taking ichthyol internally, had been much relieved, not only as to severity, but from frequency of attack. In one case, after four and one-half years' use of the remedy, apparent perfect result had been attained. And just here he makes the point that the year in-and-out use of ichthyol is permissible, and even to be recommended, whereas that of iod. kali is not so; also refers to the fact that eczemas in old people are not unfrequently concomitant with asthma, and believes (as most do nowadays) that they are related, if not, as some claim, inter-convertible.

He has the same argument in regard to the genito-urinary system, but says his experience is not large or perfect here. Quotes a rather dubious and uncertain case of an old gentleman who had suffered with kidney diseases, etc. It is chiefly interesting in view of the long period he had taken ichthyol—about seven years in all, for four years constantly, as well as in large dose—and looked at the end of that time a good deal better than when he saw him first. The doctor, in this case, seems, however, a little vague in speaking of the direct effect of the medication.

Under the second head he says articular and muscular rheumatisms take the right of line, from the simple forms, to those of arthritis deformans. He says that its action in this is so distinctly beneficial, and has been recognized and acknowledged as such by such high authority, that further reference to the subject is not required.

Next comes acute and chronic alcoholism, which has relatively escaped notice by observers hitherto. He says that in his practice in hospitals, etc., it is his custom to give, with great effect and good result, relatively large doses of the remedy, over thirty or forty grains; that it seems to act as tonic and corrective to circulation-anomalies, and that he carries it (use of remedy) up to the point of saturation of system.

He says it takes away appetite for strong liquors, and recommends it to those having charge of inebriate and insane asylums.

Recommends the remedy in chlorosis, diabetes, and cachectic con-

ditions in general, such as tuberculosis, carcinoma, lepra, tertiary syphilis, etc. ; believes it helps the appetite in all these cases by equalization, etc., of the circulatory system.

Says, in conclusion, that the medical world should try to become better acquainted with the virtues of this drug ; and affirms that the fondness of, and for its use, will certainly increase in direct ratio to the time of using.

BACTERIOLOGY.

BY B. MEADE BOLTON, M. D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

ON THE DISINFECTION OF TYPHOID-FEVER AND CHOLERA FÆCES WITH LIME.

Dr. E. Pfuhr (*Zeitschrift f. Hygiene*, Bd. VI., Heft 1) determined the amounts of dry quick-lime, and of freshly slaked lime, necessary for rapid and effectual disinfection of the bacteria of typhoid fever and of cholera asiatica contained in diarrhœal fæces. As it is of no practical value to destroy the vitality of all the micro-organisms found in diarrhœal fæces, P. first sterilized with steam the fæces with which he worked. In this way he avoided the complication of having different kinds of bacteria in the stool. The sterilized fæces was then divided into Erlenmeyer's flasks, 20 c. c. to each flask. One set of flasks was inoculated with pure cultures of typhoid-fever bacilli, and another set with pure cultures of the cholera bacilli. In some of the flasks the effect of adding quick-lime in lumps, in others the effect of adding the same in powder, and in others again the effect of adding milk of lime. It was found that in the first two sets of experiments, where lime was added in substance, the lime, for reasons readily understood, did not mix well, and therefore was comparatively slow in its action even where as much as six per cent. by weight was added. The action was most efficacious where fresh milk of lime, containing twenty per cent. of CaO was used. This solution, added in the proportion of one of fæces to two of lime-water, destroyed the vitality of typhoid-fever and cholera bacilli in one hour. A good quality of lime, such as is used in brick-laying, answers every purpose. Where only lime containing many impurities is obtainable, it can be used perfectly well, but in every case the chemical reaction of the mixture, after adding it to the fæces, must be decidedly alkaline.

CHOLERA NOSTRAS.

Dr. G. Frank and Dr. Kartulis (Frank, Zeitschrift f. Hyg., Bd. IV., Heft 2; Kartulis, *ibid.*, Bd. VI., Heft 1) both have come to similar conclusions in regard to the ætiology of this disease. In eleven cases of supposed cholera nostras F. found two of them due to arsenic poison, and two of them due to peritonitis. In the other seven cases the cause was undiscoverable, and was therefore assumed to be cholera nostras. Twelve cases of supposed cholera nostras examined by K. proved to be due to poisoning of one sort or another, except in two of the cases. In none of their examinations could either of the investigators find the Finkler-Prior bacillus. There was no one kind of bacterium constantly present in any of the cases. Consequently, if cholera nostras is a disease *sui generis*, and if, moreover, it is caused by bacteria, there is probably more than one kind of bacterium capable of producing it.

ON THE APPLICATION OF SOLUTIONS OF CARBOLIC-ACID SOAP TO PURPOSES OF DISINFECTION.

Dr. Nocht (*ibid.*, Bd. VII., Heft 1) experimented with different amounts of so-called one hundred per cent. carbolic acid added to solutions of soap of various strength. He finds that with a three per cent. solution of soap he can add six per cent. carbolic acid, and get a clear solution; and similarly, in six per cent. soap-solution, he could dissolve twelve per cent. carbolic acid: in both cases hot (60° C.). And six per cent. soap-solution, with the addition of an equal amount (six per cent.) carbolic acid, remains clear even by room temperature. It was found that the percentage of soap had no influence upon the disinfecting power of the mixture. Temperature plays an important part. In hot or warm solutions the disinfection was much more rapid and effectual. Non-spore-bearing bacteria, cholera bacillus, and bacillus of typhoid fever and staphylococcus pyogenes aureus were killed in half an hour in cold soap-solution containing one and one-half per cent. carbolic acid. N. advises the use of this soap for disinfecting clothing. It does not injure or discolor even delicate white fabrics; the only material at all affected by it is flannel, which is tinged uniformly pinkish. The kind of soap is immaterial. N. recommends for practice the following: three per cent. hot soap-solution, to which five per cent. of one hundred per cent. carbolic acid is added. Clothes should be kept in this solution for some time at a temperature of 40° C. to 50°. Leather is not injured by such treatment.

ON THE ÆTIOLOGY OF DIPHTHERIA.

Dr. Th. Escherich (Centralblatt f. Bacteriologie u. Parasitenkunde, Bd. VII., No. 1) has come to the conclusion that the Klebs-Loeffler bacillus is the cause of diphtheria, in spite of most trustworthy author-

ity to the contrary. E. made a study of twenty-two cases of diphtheria during an epidemic, and found the Klebs-Loeffler bacillus in twenty of the cases. In one of these, however, only upon a second examination, one of the two cases in which the bacilli were not found, was a case of so-called chronic diphtheria, in which the membrane had been present for a long time without causing any general disturbance. The other case was difficult of examination on account of the struggles of the patient; but in this case the bacilli were found after the death of the patient. In all the other cases the inoculation of various media with the small amount of infectious material obtained by touching the diphtheritic membrane with a platinum loop, or even with a straight platinum wire, was sufficient to obtain the characteristic bacilli from. E. found colonies of a streptococcus as a more or less constant contamination, but does not regard these micro-organisms as having any connection with diphtheria, but as harmless inhabitants of the mucous membrane of the throat.



PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.,

Associate Director of the Department of Physiology and Experimental Therapeutics,
Hoagland Laboratory, Brooklyn.



A PHYSIOLOGICAL CHANGE IN EUROPEANS LIVING IN THE TROPICS.

(“Ueber eine physiologische Abweichung bei den unter den Tropen lebenden Europäer.” By Dr. M. Glogner, Virchow’s Archiv, 1889, vol 115, pp. 345-348.)

Dr. Glogner, who is surgeon in the Army of the Netherlands in India, has found, as the result of experiment on twenty-five soldiers, that the urine of soldiers who have been, for over a year, in the tropics, contains only about half as much urea and other nitrogenous excreta as are ordinarily excreted by soldiers *living on a similar diet* in Europe; and that those who have been in the tropics over four years excrete markedly less than those who have been there only one year. Only two marked exceptions were found out of twenty-five cases, and these were, on the whole, satisfactorily explained. The author suggests two possible explanations, viz., that the albuminous food is not absorbed from the intestine, or that, after getting into the blood, it is not broken up and used by the tissue-cells.

The author leans toward the former view, and to the reviewer the

latter is impossible, for the nitrogenous part of the food, when once in the blood, must be gotten rid of in some way, or it would accumulate there indefinitely.

To understand the import of these experiments, it must be borne in mind that the amount of nitrogen excreted in the urine does not depend upon the work done by the individual, but upon the food. Only a very small part of the nitrogen of the food goes to replace nitrogenous waste in the tissues. The greater part of the nitrogenous food is split up by the liver, the nitrogen being given off as urea and allied products, which pass from the liver into the blood, and thence are removed by the kidneys, while the remainder is stored up as food-supply by the liver, and given out to the tissues when needed. When the nitrogenous waste-products from the liver are not properly removed by the kidneys, they accumulate in the blood and give rise to the well-known disturbances of uræmia. It is possible that the constant passage of even the ordinary quantity of nitrogenous waste from the liver to the kidney, through the blood, would have a deleterious influence on the system in tropical countries, and hence the digestive and absorptive apparatus would acquire the property of excluding an excess of such food. This would be a very interesting fact to prove, and would be of economic value in regulating the rations of soldiers in tropical countries.

To draw *definite* conclusions from such a research, it would be necessary to take cognizance of at least four points which the author has not entered into, viz. :

1. The secretion of sweat and the loss of nitrogen from the body by this channel.
2. The condition of the kidneys, whether they function the same and as actively in the tropics as in Europe.
3. An analysis of the fæces. (The food was analyzed.)
4. A comparison of the urine of soldiers in Europe and in India under nitrogenous equilibrium, and an analysis of the urine of natives.

The paper does not assume to be an exhaustive treatise, and the observations are very interesting as far as they go. It is to be hoped that they will be extended along the lines indicated.

ACTION OF POTASSIUM IODIDE UPON THE HEART (AND VESSELS).

("Comment l'iodure de potassium agit sur le cœur. Expériences de laboratoire et de clinique." By G. Sée and Lapique, Bulletin de l'Académie de Médecine, Oct. 8, 1889. Quoted from Revue des Sciences médicales, vol. 35, Jan. 15, 1890.)

Sée and Lopicque have studied the action of the iodides of potash and of soda on the heart and vessels, both in the laboratory and at the bedside, and believe that potassium iodide is the true "*médicament du cœur*." It first increases the energy of the heart and raises the blood pressure; then, as a later effect, it gradually dilates the arterioles and facilitates the flow of blood through them. This action extends to the coronaries, and thus directly aids the nutrition of the heart.

They recommend it in cases of dilated or overtaxed heart especially, though they praise it highly in all valvular or myocardiac lesions with low arterial tension. They recommend it in doses of two to three grammes (thirty to forty-five grains), which leads the reviewer to suppose that the doses are not often repeated.

[Great caution should be used in substituting such a drug as this for digitalis and other tried remedies, as these undoubtedly have a tonic action on the heart, and are not as likely to produce secondary disturbances.]

A NEW LOCAL ANÆSTHETIC WHOSE USE IS NOT WITHOUT DANGER.

Onodi ("*Versuche mit Erythrophlacin*," *Centralblatt f. d. med. Wissenschaften*, p. 225, 1888) and Crespi ("*L'eritrosleina como anestetico locale*," *Bull. d. Soc. Lancisiana d. Ospedali de Roma*, decembre, 1888), working independently on erythrophlæine, point out the same objections to its use, viz., that it is not as strong as cocaine, its action is less persistent, and it is apt to induce inflammation, which may even be severe.

MISCELLANEOUS.

METHODIST EPISCOPAL HOSPITAL.

The managers of the Methodist Episcopal Hospital announce that twelve free beds are now available in the Children's Ward of that hospital, and that they would be glad to have members of the medical profession of the city send to the hospital any of their little patients who may be in need of hospital treatment.

NEW BOOKS AND BOOK NOTICES.

All books received by the JOURNAL are deposited permanently in the Library of the Medical Society of the County of Kings.

Hereafter, in describing the size of books in this department, we will avoid confusion by using the abbreviations and size classification of the American Library Association.

These abbreviations refer to the size of the page, without any reference to the old fold system, viz.:

F, folio, over 30 cm.; Q, quarto, under 30 cm.; O, octavo, under 25 cm.; D, duodecimo, under 20 cm.; S, sixteenmo, under 17½ cm.; T, twenty-fourmo, under 15 cm.; Tt, thirty-two mo, under 12½ cm.; Fe, forty-eightmo, under 10 cm.

nar., narrow, width less than ¾ height; sq, square, width more than ¾ height; obl., oblong, width more than height.

EMERGENCY NOTES: WHAT TO DO IN ACCIDENTS AND SUDDEN ILLNESS UNTIL THE DOCTOR COMES. By Glentworth R. Butler, M.D. D, c. New York: Funk & Wagnalls, 1889.

This manual is probably the outgrowth of the doctor's labors in this direction as Medical Director of the Red Cross Society of Brooklyn; and Lecturer on Emergencies and Home-nursing at the Pratt Institute and at the Brooklyn Normal School for Physical Education.

While the author, with characteristic frankness, claims that there is nothing original between the covers except the eighteen illustrations, he certainly shows skill in authorship in the selection and arrangement of much matter that is valuable and useful, especially to laymen who are making this a study, as every one should.

It is rarely that we would commend a medical book for domestic use, knowing that the adage, "A little knowledge is a dangerous thing," applies especially to this class of works; but this little book is so plainly written and so fully illustrated that we hope it will find a place in every household, for it treats of just such emergencies as any one may meet in every-day life; as will be shown by the headings of a few of the chapters, viz.: Means for stopping Hæmorrhage; Wounds; Burns and Scalds; Frost-Bites; Treatment of Drowning and Suffocation; Transportation of the Sick and Injured, etc.

The illustrations are well executed, and among the early fruit of the art department of the Pratt Institute. If the institution had a printing and publishing department, we would no doubt have seen better work in this line. We sympathize with the doctor in regretting that such good literary work should be placed before the public with every page askew, and other marks of careless publishing.

ESSAY ON MEDICAL PNEUMATOLOGY: A PHYSIOLOGICAL, CLINICAL, AND THERAPEUTIC INVESTIGATION OF THE GASES. By J. N. Demarquey, Surgeon to the Municipal Hospital, Paris, etc. Translated, with notes, additions, and omissions, by Samuel S. Wallan, of New York. O, c. Philadelphia and London: F. A. Davis, publisher, 1889.

While the use of oxygen as a therapeutic agent has been steadily increasing among us, for the past twenty years, we have devoted to it very little thorough and scientific investigation, most of our experimenters having used it chiefly from

an empirical standpoint. For this reason a translation of the more pertinent portion of Demarquoy's work, originally reported to the Academy of Medicine of Paris, and published in 1866, will be welcomed by the American profession.

Much of Demarquoy's bulky volume has been left out by the translator as in his opinion too much given to speculative discourse for profitable reproduction, for which omissions practical Americans will thank him.

The work opens with a valuable study of the gases of the blood in their physiological condition; which is followed by chapters on the medical history of these gases, their physiological and therapeutic action, and their preparation and mode of administration, the whole being well illustrated with over twenty cuts, and supplemented by a full and valuable bibliography of the subject, beginning with Priestly's "experiments on different kinds of air, London, 1774," and ending with the latest editorial in the *University Medical Magazine*, April, 1889.

SYNOPSIS OF HUMAN ANATOMY: BEING A COMPLETE COMPEND OF ANATOMY, INCLUDING THE ANATOMY OF THE VISCERA, AND NUMEROUS TABLES. By James K. Young, M.D., Instructor in Orthopædic Surgery and Assistant Demonstrator of Surgery in the University of Pennsylvania, etc. D, c. Philadelphia: F. A. Davis, publisher, 1889.

This little book is one of the physician's and student's ready-reference series, and the author has endeavored, by well-selected woodcuts, typographical arrangement, and numerous tables, to facilitate the acquisition of the subject. Though but a small duodecimo volume of less than four hundred pages, it contains within its covers a concise though complete synopsis of human anatomy arranged in a style readily accessible for reference and study.

A MANUAL OF INSTRUCTION FOR GIVING SWEDISH MOVEMENT AND MASSAGE TREATMENT. By Prof. Hartvig Nissen, Director of the Swedish Health Institute, Washington, D. C. D, c. Philadelphia: J. A. Davis, publisher, 1889.

Great interest is now being taken in the subject of passive exercise, of massage treatment, and the "Swedish movement-cure," and most of the literature on the subject is scattered through the various medical journals, and inaccessible to the majority of those interested. We know of no other manual in the English language which gives detailed information as to how to apply the treatment in different diseases.

It supplies a need, and as a practical help in our treatment of the sick we welcome it to our library shelves.

ENUCLEATION OF TUBERCULOUS GLANDS. By Thos. W. Kay, M.D., of Scranton, Pa. O, pamph., pp. 11. Reprint from Med. Register, February 9, 1889.

Besides being in itself a valuable contribution to the subject, special students will find a special value in the numerous bibliographical references which the author has given as foot-notes.

CEREBRAL ABSCESS FOLLOWING INJURY OF THE SKULL. By the same author.

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ORIGINAL ARTICLES.

A CRITICISM OF THE WEIGERT HOT AIR TREATMENT OF PULMONARY TUBERCULOSIS.

BY WALES L. CARY, M.D.,
Physician to the Brooklyn Throat Hospital.

Read before the Medical Society of the County of Kings, November 19, 1889.

The presentation at this date of a criticism of the Weigert method without clinical data demands a word of explanation.

The original study of the subject was undertaken in connection with the development of the pulmonary department of the Brooklyn Throat Hospital with a view to the introduction there of the most approved apparatus for treating consumptives.

The conviction of inefficiency and possible detriment was so strong that no treatments were instituted, and the elaborated theoretical condemnation has waited, in essentially its present shape, the passing of the summer recess and the following sessions of the society having a full programme.

Recent abundant clinical reports confirm the conclusions to be hereinafter stated in our recapitulation; though as yet no one has, to our knowledge, pointed out the reasons for failure nor indicated the probability of detriment in attempts at pulmonary sterilization by heat.

For the information of such as have not seen the original and sub-

sequent articles upon the subject of the treatment of pulmonary tuberculosis by inhalations of hot air, as proposed by several clinicians, but most prominently introduced by Dr. Louis Weigert, of Berlin, we may state that the apparatus is adapted to the administration of air heated, in the respiratory tube, up to 320° to 500° F., and delivered to the patient during from one to four hours, at one or two daily sittings, thus determining "a temperature of 112° F. in the expired air." The possibility of sustaining respiration and unimpaired health under these conditions is argued from the necessity for certain artisans to bear a temperature greater even than that sustained in the Russian bath, in which the atmosphere is heated up to and even beyond 212° F. The object sought is a gradual destruction of the tuberculous bacilli by this interrupted sterilization, and that it is attained is evidenced, according to the brochure cited above by "1. Removal of dyspnœa. 2. Lessened cough. 3. Primary increase, secondary decrease and subsequent entire disappearance of expectoration. 4. Cessation of fever. 5. Cessation of night-sweats. 6. Increase of appetite. 7. Accession of body strength. 8. Entire stoppage of the progress of the disease. 9. Disappearance of bronchiectases. 10. Clearing of infiltration. 11. Cessation of hæmoptysis. 12. Removal of catarrhal symptoms. 13. Cicatrization of cavities. 14. Increase of weight. 15. Primary increase, subsequent decrease, and finally complete absence of tubercular bacilli, together with a gradual decrease and later an entire disappearance of pus corpuscles and elastic fibre from the sputa."

The theory by which all this benefit is obtained rests upon the following conditions affecting the bacillus: "Its temperature optimum is 99.5° F. * * * * at 101.3° they hardly grow at all * * * * at 107.6° their development ceases altogether." The treatment is attended by "an accelerated pulse for the first minutes only, an elevation of temperature of the whole body 1° to 2° F., which is maintained for about an hour after cessation of treatment; the general health remains undisturbed."

Let us take for consideration the various points of this monograph, beginning with the temperature at which the bacillus is most readily developed within the vital organism. It is generally known that in culture experiments the impregnated medium is maintained between 37° to 38° C., *i.e.*, 98.6° to 100.4° F., the temperature first proposed by Koch as that at which the bacillus tuberculosis develops most rapidly; but that there are variations in the conditions necessary to produce the best results when the culture material is changed is also recognized by bacteriologists,¹ and that a more ready growth occurs at

¹ Outlines of Bacteriology, Shakespeare, in Cyclopedia of Dis. of Children.

a higher temperature when a living organism is the seat of the infection seems borne out by comparative pathology and the natural history of the disease in man.

In the course of studies for the establishment of the relation of Koch's bacillus to tuberculosis, various animals have been utilized and many degrees of susceptibility noted, which, being analyzed, seem to warrant the inference of a dependence of this varying inoculability upon differences in the normal temperatures of the animals in question. The higher the body heat the less resistance presented to the infecting agent. In this connection we will cite an article by Dr. Blaine,² who quotes the experience of several European experimenters upon the inoculability of various animals, giving the percentage of successes. To this table we have appended a column, giving the normal temperature of each.

No. of experiments,	1	Upon	Horse.....	Tem. 99.2° F.....	% of success,	0
"	"	20	" Dogs	" 100.2° F.....	"	25
"	"	17	" Rabbits.....	" 103° F.....	"	31
"	"	35	" Sheep	" 100.4°-104° F..	"	51
"	"	9	" Cats.....	" 100.4° F.....	"	55
"	"	60	" Pigs.....	" 103.2° F.....	"	65
"	"	6	" Guinea pigs..	" 102.4° F.....	"	83
"	"	13	" Goats.....	" 103° F.....	"	84
"	"	5	" Calves.....	" 103.5° F.....	"	100
"	"	2	" Pigeons.....	" 108.8° F.....	"	100
"	"	Numerous	" Fowls.....	" 106°-109.9° F..	"	100

We are not blind to the fact that the ratios of relative susceptibility and temperature are not absolutely constant, particularly in the case of the rabbit and guinea-pig; but the tendency is distinctly shown. Some of these discrepancies may be due to an inconstant degree of virulence of the infecting material. Such varying virulence is indicated by a second table quoted by Dr. Blaine, which summarizes the results of inoculation-experiments performed with tubercular material from animals of several species, and to be in accord with our view of the inter-relation between body-heat and bacillary virulence, inoculations from the high-temperated animals should produce the greatest percentages of success.

No. of Experiments.	Source of Material.	Temp of Infecting Animal.	Per cent. of Success.
25.....	Man.....	98.6°.....	36
2.....	Rabbits.....	103°.....	50
33.....	Pigs.....	103.2°.....	53
117.....	Heifers.....	103.5°.....	61
2.....	Sheep.....	104.9°.....	100
3.....	Monkeys.....	103.2°.....	100
5.....	Birds.....	106°+.....	100

² New York Med. Record, vol. xxxi., No. 3.

Each of these tables, omitting a designation of both the source of the natural and the subject of the experiment, is open to inaccuracies, but the general result seems consistent. And all seeming fallacy would be removed could we have been informed, if perchance it were so, that, for instance, the high-temperated rabbits (103°) were inoculated with an attenuated virus, perhaps from man; and thus the low percentage (31) would be accounted for. Or on the other hand, the guinea-pigs, with a normal temperature of 102.4° , which if inoculated with similar virus should be lower in the scale than the rabbits may have been subjected to the intensified poison of fowl, and the resulting high ratio (83) be confirmatory instead of mildly confusing. This varying virulence we conceive as conforming to the general biological law of increased or diminished strength of successive generations as their progenitors were matured under favorable or adverse environment.

Dr. Brush, in a very instructive article on Bovine Tuberculosis,³ quotes an experiment of Toussaint, who found general tubercular infection to occur more rapidly and the disease to culminate in death after a shorter period if the inoculating material were heated for a time even as high as 137° F.

Further evidence of the favorable influence exerted upon bacillary growth by elevation of the temperature of its containing soil may be drawn from the frequent development of tubercle in the *periphery* of a lung subjected to the increased local inflammatory temperature of pleurisy, the heat being greater in the immediate vicinity of the inflammatory activity than throughout the body or rest of the lung, and greater than from the symptomatic fever alone. We do not now refer to the general dessemination of tubercular infiltration, but to the local "subpleural foci" described by Jacoud.⁴

In the same way we should account for the "phthysiogenic tubercular pleurisy" of Renaud,⁵ believing the fibrino-serous inflammation to be primary and determinant of the development of such spores or bacilli as had lain quiescent awaiting such an exciting cause of activity.⁶ A more or less general pulmonary tuberculosis dependent upon excitation by the attendant fever being determined by the extent to which the infecting agents had previously gained a foothold within the lung.

Having thus submitted evidence from a general biological stand-

³ Proc. N. Y. State Med. Society, 1888.

⁴ Curability of Phthisis.

⁵ Westbrook, N. Y. Med. Jour., June 9, 1888.

⁶ Pul. Tuberculosis, Prof. H. Von Ziemssen, p. 7; also Park, Am. Jour. Med. Sc., xcvi., No. 1, p. 27.

point and from comparative pathology that the "best temperature" for the *intrapulmonary* development of tubercular bacilli is much above the normal temperature "of the human body" (Weigert), and that at all intermediate degrees up to 109.9° , the fowl's norm., which with an addition of 4° or 5° of fever heat produces a temperature even as high as 115° , the bacillus is still active. We may be permitted to refer to the natural history of the disease as observed in man to see if there will be from this source confirmatory or controverting testimony. Ringer, whose studies of temperature in phthisis have made him an acknowledged authority, says: Hyperthermia is a constant prodrome to all tubercular deposit, that it is most elevated during and in direct ratio to the tuberculization." Roberts notes that "the thermometer is particularly important in detecting the early stages of the disease and in indicating the degree of its activity." Niemeyer considers "fever is the most formidable enemy," and Bartholow, in the last edition of his Practical Medicine, writing in the light of bacteriological knowledge which was denied the earlier observers, says: "Fever heat is an index of the rapidity with which the morbid process is proceeding. If the fever is slight the bacilli are imperfectly formed * * * the number of bacilli is in direct ratio to the intensity of the disease, and when this is slow the bacilli are small, and those present contain no spores." Flint and many authoritative clinicians express views of close interaction between these factors, but even if fever is not an excitant of bacillary activity, it is at least a cause contributory to their numerical increase and perfection. It is furthermore common experience that the period of incubation is long where the inoculation has occurred upon a merely catarrhal mucous membrane or in a debilitated organism, both being unattended by fever, but more rapid during febricula or as sequent to acute disease, many of which furnish the conditions of catarrh, fever and debility. In forming a prognosis the type of fever is also considered particularly significant. If now tubercular bacilli develop with greater certainty, reproduce their kind more numerously and induce their pathogenic effects under 115° of heat and are even morphologically more perfect under temperatures of 106° – 110° , surely an artificial intrapulmonary temperature of " 101.3° " cannot "diminish their activity," nor can " 107.6° arrest their development altogether."

There is in all tuberculosis a remittency, which is shown by Koch⁷ to be automatic by reason of local variations in pathological activity caused by changed physical conditions, favoring or retarding removal of material upon which the bacilli have acted, extracting all the pubulum adapted to their nourishment.

⁷ New Syden. Soc. Rep., 1882.

Aside from the accessibility of bronchi through which products of coagulation necrosis could be discharged, other factors, contributing to liquifaction and expectoration being absent, partial or temporary arrest would spontaneously occur. These associate factors in progressive cavity enlargement and dissemination of the disease, are the putrefactive and pyogenic bacteria. This mixed infection and its interacting potentiality is mentioned by Dujardin-Beaumetz and Sajous. Thus, though there are remissions in the progress of the disease attended by a fall of temperature, this reduced activity is not due to the antagonism of the preceding high fever as would be expected if such degrees of heat, as are referred to by Dr. Weigert, were *in the organism* attenuating or retarding to the bacillary activity, but to other adequate causes. Moreover, if these variations in the intensity of the pathological process were due to the associate increase of fever, the disease would, in animals having a normal temperature of 102° – 104° , who being inoculated under transiently favorable conditions, be self-limited upon the development of 4° or 5° of fever; and in fowl, with a normal temperature of 106° – 110° , it could never gain a foothold. But to the contrary we find the high temperatured not only themselves die more rapidly from the disease, but also increase the virulence of the *matres morbi*, so that it successfully inoculates a larger percentage of resisting animals than virus from other sources. This fact confirms most strongly the favorable influence of an environment of elevated temperature.

We would not be understood as representing that Dr. Weigert expects to produce in the lung a temperature absolutely and immediately destructive to the bacilli, for such a claim would be too manifestly untenable, and to set it entirely aside one would have only to refer to the conclusions reached by many noted workers, among whom Koch and Wolfügel,⁸ in their communication upon disinfection by heat, summarize as follows: "1. Sporeless bacteria are destroyed in one and a half hours by hot air slightly in excess of 212° F. * * * *
3. Spores of bacteria require three hours at 284° F. * * * *
5. Exposure for three hours at 284° F., which is necessary for thorough disinfection, damages most *fabrics*."

But even as an imitation of discontinuous sterilization, as practiced by bacteriological workers. Weigert's attempts, even though it be admitted that there is attained in the lungs a temperature of "more than 113° ," are but a distant approach; for in the imitated measure the uninoculated culture media are exposed to temperature of 147° F. repeatedly.⁹ The discrepancy between the theoretical requirement and

⁸ New Syden. Soc. Rep., 1886, p. 525.

⁹ E. O. Shakespeare, Keating's Cycloped. of Dis. of Children.

actual attainment by the Weigert method is even more marked in the light of one of the doctor's own statements, that: "for the destruction of the bacillus exposure to a constant heat of 122° F. for a whole month is necessary." But we do not believe that these 112 or more degrees of heat are produced in the residual air space or sufficiently deep in the lung parenchyma to detrimentally effect the bacillary growth, with perhaps the exception of such as are upon the walls of the primary bronchi. Having thus expressed doubt of accomplishment equal to the claims of the originator, we will be expected to establish our basis of dissent. Here we acknowledge the difficulty of sustaining our point from analytical physics independent of actual experimentation, but in view of the admission of Dr. Weigert that "many efforts on his part have failed to ascertain the temperature of the air within the lungs," we have determined to make the attempt hypothetically. It will be noted by a reference to a diagram of the apparatus that there intervenes between the metal tube which conveys the air from the heating chamber to the patient, and the registering thermometer only a piece of "cork" or asbestos packing. This intimate connection, essentially almost a complete metallic circuit, must produce an indicated temperature, higher than the actual heat of the air passing through the tube into which the bulb of the thermometer projects.

Making a generous deduction of 100 degrees for this discrepancy and for the loss by radiation in passing the 12-18 inches of copper tubing (in a secondary 10-inch tube used for reclining patients, the doctor notes a reduction of from 25° - 45°) we are of the opinion that no patient could either efficiently hold between the lips a metallic or vulcanite mouth-piece through which air at a net temperature of 220° - 382° F. was passing, nor receive such air into the mouth without material detriment to the mucous membrane and great suffering. In order that the great mass of air inhaled be derived from the apparatus, it would be necessary that a nose clamp be used to prevent the resulting rapid reduction of temperature in the pharynx by dilution with air entering by the nose. In the absence of any evidence on this point in the pamphlet under consideration, we look for information to a secondary folio issued by Dr. Weigert, and therefore presumably accurately reflecting his view, here we learn that "the air inhaled at 500° is cooled in passing the inhaling tube and by admixture of air entering the nose and corners of the mouth."¹⁰

Concerning the temperature of the air at each subsequent stage of inspiration and within the lung, all is conjecture, and yet most confi-

¹⁰ Lecture by Prof. Kohlschütter. Reprint from the Vienna Internat. klin. Rundsch.

dently asserted to be much higher than the temperature on expiration, since it is "cooled" during its course through the heated passages. Now, again, so far as any accuracy of description of determining factors is concerned we are completely baffled to know where and how the temperature of the expired air is taken. Yet, inasmuch as there is in the apparatus a set of valves determining expiration through a special orifice, possibly the temperature is registered at this point. In this event our observations above upon measurement in metallic circuit would indicate here a second inaccuracy. But if this 112° of temperature of the expired air is taken at either of the two other possible situations, viz., the mouth or nose, the air which would first influence the thermometer would be that which had been most recently inhaled, and was accordingly most nearly up to the heat of the inspired air, there being but the shortest conceivable time, intervening between inspiration and expiration, for cooling by contact with the tissues. Moreover, these tissues of the upper respiratory tract, after the first few minutes of treatment, would become considerably heated by the air previously inspired. Thus, also, would each succeeding descending anatomical region be elevated above its normal temperature, and consequently possess lessened capacity for cooling. This local hyperthermia would increase as the duration of the treatment were prolonged, and particularly as the mucous surfaces became more and more dry, by the absorption of moisture, up to the point of saturation for the temperature of the passing air, equivalent, at 112°, to 2ix each hour, provided so much were secreted. But though there might be sufficient moisture to saturate air of this temperature (112°), yet it is incredible that enough could be secreted to saturate the higher temperatured air of inspiration. For if Dr. Weigert's extreme temperatures be accepted, 150° to 175° would be a low mean for the heat of inspiration, and, with an average of five hundred cubic inches of air breathed each minute, the amount of moisture required would be respectively 2xviii and 2xxxvij each hour. That this large demand would thoroughly dry the walls of the mouth and upper portion of the air-passages is evident. But more significant than the large capacity for secretion requisite to supply this moisture, is the recognition of the result which would invariably occur if the mucous membrane did not become dry, but succeeded in furnishing an amount of secretion adequate to saturate the inflowing air. All admit that the air must be cooled as it penetrates the lung, and, if it had been saturated in the mouth and upper respiratory tract, there must necessarily be a precipitation of the excess of moisture when the deeper cooler parts are reached. That such conditions do not pertain is evident, not alone from the statement that the quantity of this precipitation would be, by the data noted above, from 2ix to 2xxvij each

hour—an amount quite sufficient to produce disastrous results during a four-hour treatment, which duration Dr. Weigert prescribes and has carried out in many of his cases—but also by the observation that expectoration is diminished after several treatments, though it had been somewhat increased at first; the latter condition being the reactionary result of the irritation of the mucous membrane, rather than the effect of precipitation from the inspired air.

If, then, the oral, pharyngeal, laryngeal, trachial, and bronchial walls are dried, they must be overheated, and there be established temperatures intermediate between those of the two extremes, viz., $320^{\circ} - x$ and $99.5^{\circ} + y$; x representing the degree of cooling by contact with buccal surfaces, and y the amount that the residual air is elevated in temperature. This last would be but slightly above the normal body heat, on account of the great difficulty of materially elevating the temperature of the residual air. For whatever of heating was thus accomplished would be through the admixture of but about one-twelfth of the lung-capacity at each respiration, and the obstacles to conduction and convection are so great that the leveling up would be very slow, particularly as being opposed by the passage over the 1,400 square feet of internal lung-surface of the entire quantity of blood three times each minute, this blood being at approximately 100° F. Inspiration being attended by the conditions which we have noted, the last air entering the mouth, but slightly cooled, makes the first impression upon the thermometer which is to register the expiratory temperature. There being no interval between inspiration and expiration, the mercurial column is very rapidly raised by the air which has passed, by a slightly circuitous, though short route, itself superheated, from the apparatus to the thermometer. The supply of air flowing quickly from the pharynx, larynx, and trachea, their walls being hot and dry, and this air not having passed below them nor remained long for cooling, further assists in raising the registering index. The next block of air, supposing it to be from sufficiently low in the respiratory tract to be below a mid-point between the extreme temperatures, would be warmed by rising into the superheated upper regions, and thus being of nearly the same temperature as the last would merely arrest further thermometric rise. Now completing the expiration with the air which had mixed with the residual air and become like it in degree of heat, flowing up over the surfaces which, in the short intervening time (not more than one or one and a half seconds), have had but slight opportunity for cooling, it surely is not cooled, even if it also is not somewhat warmed in passing. Accepting this analysis, the temperature of the complemental air cannot be higher than that registered of the expired air, and may be considerably lower,

while the residual air and its containing lung-parenchyma must be much below 112°. Indeed, if the laws of atmospheric humidity and the observed desiccation be associated, we are driven to the conclusion that to be beneficial, within the lung, as dry air, the inspiratory temperature must not be elevated above that normal to the residual air.

Other analyses result in the common conclusion of absent or slight elevation of temperature within the lung alveoli; as, for example, one based upon the total elevation of the body-heat, this being observed by Dr. Weigert to be but 1° or 2°.

In its course through the body, the blood varies in temperature but from one to one and one-half degrees. Between the right and left hearts there is a reduction of .5° F., which is lost during passage of the pulmonary circuit. The absence of currents in the deep portions of the lungs, the slow interchange between the tidal and residual air, together with the frequent passage of the entire blood in close contiguity to the latter, maintains a very constant temperature between the two, and makes it almost impossible to elevate the temperature of the air without affecting the blood in an equal degree. Therefore the slight elevation which Dr. Weigert has noted, even if it were registered in the axilla, would indicate but 2° or 2½° rise in the lung. And, conversely, there cannot be a superheating of the air, since there is no corresponding increase of body-heat. Moreover, since the breathing of air elevated in temperature but a few degrees above the body-heat would diminish the radiation from the lung of a part of the energy which is normally dispersed here, there would occur a corresponding rise of temperature from this cause and independent of the superheating of the residual air. This artificial fever occurs and progresses even to death in the water¹¹ or sun¹² bath. A corresponding elevation has been noted by many travelers to tropic zones; also a similar depression upon entering a temperate or frigid climate. The amount of this variation has been found by Brown-Séquard, Parkes, and Livingstone to be about .06° for each degree of change of temperature in the environment.¹³ On this basis it would be necessary to breathe air of but 100° F. to produce an elevation of 1.8° in one accustomed to a mean temperature of 75°.

But we are not restricted to physical explanations of the increased body-heat after the Weigert inhalations; physiological chemistry offers at least one as satisfactory as any already mentioned. Prof. H. C. Wood considers "fever to be a complex nutritive disturbance, in

¹¹ Ziemssen's Therapeutics; also Wood's Essay on Fever.

¹² Universal Annual Med. Sci., 1889; art., "Insolation."

¹³ Parke's Hygiene.

which there is an excessive production of such portion of body-heat as is derived from chemical movement in the accumulated material of the organism." Now, during the hot-air inhalations, there must be an accumulation in the system of waste products on account of the diminished oxygenation, resulting from a lessened capacity of the hot air for oxygen-carrying, and also, from the same cause, inability to carry off the due amount of carbonic acid. This reduction of oxygen and carbon diox de interchange is fifty per cent. between the temperatures of 45° and 90° , and for an inspired air above 100° or 110° there must be a materially greater diminution of respiratory capacity. As soon as the respiration is restored to its normal conditions and sufficient oxygen is carried by the blood, there is set up compensatory extra-oxidation, and an elevation of temperature results.

There remains for us another method of rendering these temperature claims improbable, and its condemnation seems to us very positive and unimpeachable. In pursuance of this plan, let us suppose that the residual air is heated "much above 113° ," or rather merely up to that point, and seek to determine the consequences. First, upon the reasoning of a preceding argument, the entire blood-mass would be heated to approximately the same degree, and gradually the whole body would approach the same temperature. Are there not here all the conditions of heat-stroke, and would not the attendant thermic fever determine death if unarrested? Would not the gravity of the inhalation-fever be greater than that of insolation by reason of the diminished gaseous interchange, the impaired respiratory capacity pointed out above? Would there not be leucomainic poisoning through the diminished or imperfect oxidation of waste products? Would there not be disintegration of blood-corpuscles and a strong tendency to coagulation of the blood and of the myosin throughout the body?

Since the nerve-centres and all nerve-tissue is also very susceptible to overheating, and in view of the role ascribed to nerve-degeneration¹⁴ as a cause of non-tubercular phthisis, and as perhaps the most potent predisposing factor to tubercular inoculation, it behooves us to be particularly mindful of any influence which lowers the vitality or activity of the nervous system.

But even if this heat (113°) could be maintained in the lung without detriment, would it be attenuating to the bacilli? If we draw our conclusions from the lower animals, instead of test-tubes and culture-ovens, the prospect is not encouraging. For, if to the normal temperature of the common fowl and pigeon (106° - 110°) four or five degrees

¹⁴ Prof. T. J. Mays, *Med. News*, May 25, 1889. Brunton, *St. Barthol. Hosp. Rep.*, vii., 1871.

of fever-heat be added, there will be produced in them temperatures of 110° – 115° , corresponding to moderate elevation of 102.5° – 103.5° in man. Yet many experiments and observations upon accidental inoculation of these animals with human tuberculous material, even by that most unfavorable method, ingestion, have proved conclusively the presence of true bacillary tubercle in all the abdominal viscera and in the lungs. Therefore, not only does the high temperature fail in preventing inoculation, but the fatal termination comes after a shorter period with increased rapidity of progression. The bacilli are reproduced more rapidly and are of augmented virulence. In support of this last, we refer back to the percentages of successful inoculation, cited in the second table of this communication, and to the more positive evidence of the observations of Drs. Sutton and Gibbes¹⁵ upon avian tuberculosis, in the London Zoölogical Gardens. Their studies were made upon over one thousand birds of various species. Those most often found tuberculous were the common fowl, peacock, and partridge. Not only was the disease very active in all these high-temperated birds, but refuse from their dead bodies, eaten by small carnivora, produced in these resistant animals, by the most unfavorable avenue of inoculation, the intestinal tract, more or less general tuberculosis.

Where, then, lies the hope of cure by hot-air inhalations?

In the five published cases¹⁶ there appear improvement and favorable change in some of the symptoms, these being collectively as follows: "Diminution of moist rales in all; slight retraction of the area of dulness, bronchial respiration, bronchophony, and, in one case, disappearance of amphoric voice; extension of area of broncho-vesicular and vesicular respiration; lessened dyspnœa and fever; in two cases slight emphysematous development; and one, two and one-quarter pounds gain in weight during five months' continuous treatment.

These cases having had symptomatic treatment, careful regulation of the hygienic and dietetic conditions, in addition to the inhalations for periods varying from one to five months, we conceive that much of the benefit arose from these factors, and that the hot inhalations were beneficial by reason of the pulmonary gymnastics, the introduction of dry air, not necessarily hot, and even probably better cool or cold, lessening of expectoration, and, secondary to this desiccation, diminished capability for absorption of septic matters from the larger bronchial tubes, and freely communicating cavities.

The conclusions to be drawn from the preceding remarks may be summarized as follows:

¹⁵ Path. Soc. Trans. London, xxxv., p. 477.

¹⁶ N. Y. Med. Rec., Dec. 15, 1888.

I. Comparative pathology and the natural history of pulmonary tuberculosis in man indicate that the most favorable temperature for the *intra-pulmonary* development of its bacillus is much higher than 99.5° F.

II. Tubercular bacilli, in a favorable soil within an animal organism, are not attenuated nor their development arrested by temperatures which are inimical to them in artificial or non-vitalized culture-media, but even rendered more virulent and more rapidly reproductive.

III. Temperatures demanded for effective disinfection or discontinuous sterilization by dry heat are impracticable and injurious to the animal organism.

IV. It would appear that Dr. Weigert is mistaken in supposing that the residual air is heated much above 113° F. ; and that, in fact, there is but very slight, if any, elevation of the intra-pulmonary temperature. Recent advices from Germany inform us that accurate measurement of the actual elevation of the lung temperature is but $\frac{1}{2}$ - 1° F.

V. If it were possible to produce and maintain, even for a short time, an intra-pulmonary temperature approaching 113° , there would be produced, independent of the effect upon the lung-tissue, grave degenerative changes in the blood and entire cellular elements of the body.

VI. At temperatures far short of those claimed, there would be produced an auto-infection and accumulation of excrementitious products, by diminished respiratory capacity, directly deleterious to the organism at large, and indirectly embarrassing to those nutritive activities upon whose integrity all hope of permanent benefit to the consumptive must rest.

VII. The factor productive of the benefit arising from the Weigert method is the *dryness*, rather than the heat, of the inspired air; and this desiccating action cannot be obtained except the temperature of the inspired air be as low at the upper as in the deeper parts of the lung. Of further benefit are pulmonary gymnastics, the psychological effect, and possibly in some cases a favorable action upon the bacteria in the larger bronchi.

NOTE ON THE IMMEDIATE REPAIR OF LACERATIONS OF THE CERVIX.

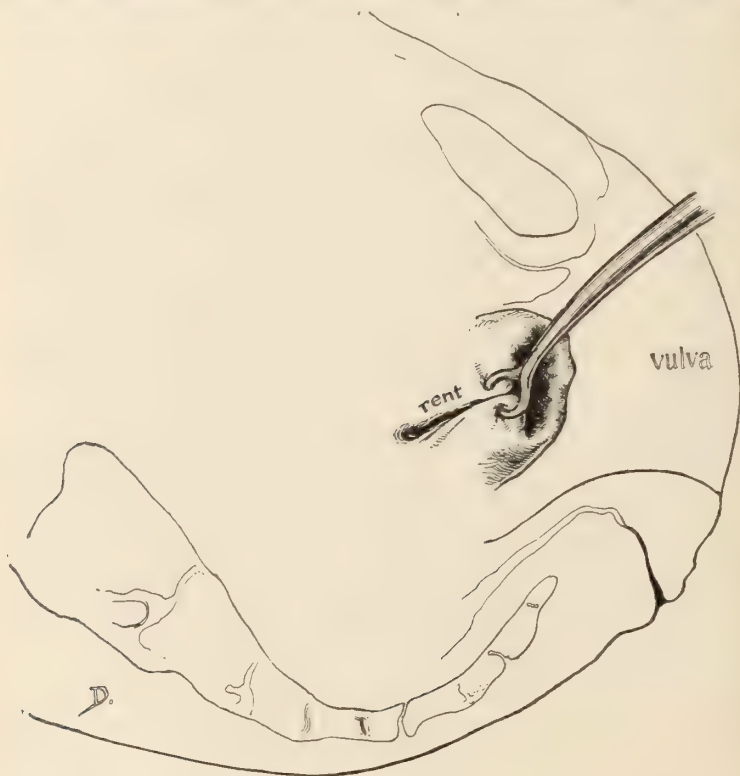
BY ROBT. L. DICKINSON, M.D.,

Lecturer on Obstetrics and Assistant Obstetrician to the Long Island College Hospital.

Read before the Medical Society of the County of Kings, December 17, 1889.

Recent experience with this operation has been so favorable that I deem it worth while to lay the method briefly before you.

Simplicity of Method.—The operation may be done in Sims's position. I prefer the dorsal decubitus, with the patient's hips at the edge of the bed and the legs held well flexed by the sheet-sling, which is a



simple substitute for the various clutches (N. Y. Med. Jour., Apr. 1890) (a drawing was shown). *The lower corners of the tear are seized in the grip of a single pair of double tenaculum forceps.* The extent of the tear is thus seen and the rent steadied for stitching. This is the one point on which I wish to lay stress. A needle-holder and straight needles,

or this modified Peaslee needle bent at right angles and curved like a Hagedorn, serve well. Trustworthy gut is best, but I have been using ordinary No. 8 cotton thread, soaked in biniodide solution, 1-4000. No assistant is required beside the nurse.

Objections.—Several theoretical reasons will occur to you at once why this little operation might be difficult in ordinary cases.

1. The flabby vaginal wall may fall in and hamper all manipulations.

2. The bell shape of the cervix after labor might fog any working ideas of the normal relations.

3. The "reach" is too long.

4. Blood may pocket in the vagina and hide the sutures, in a way even more annoying than is the case in the perineal operation.

Whereas, The local conditions are as follows, in reality :

1. The vaginal walls have been over-distended so recently that they are held back without much trouble.

2. The cervix is so long and flabby that it is easily drawn into view. After long labors the anterior lip is often visible at the vulva. It is after long labors that rents are most commonly found, and it is only for lacerations extending to the vaginal wall that the operation is proposed.

3. The seizure on both sides of the laceration checks hæmorrhage. This cessation is so distinct as to be somewhat surprising, and it seems to point to the cervical vessels as the source of the bleeding in those cases where a firmly contracted uterus bleeds. In two of my cases the flow was very free until the cervix was caught, when it ceased at once.

One other consideration deserves mention. The *involution* of the uterus has been remarkably rapid and complete in all these cases, the cervix particularly regaining a nulliparous size in less than three weeks.



DISEASE GERMS AND DISINFECTANTS.

BY JOHN G. JOHNSON, M.D.

Read before the Medical Society of the County of Kings, December 17, 1889.

This is a strange world. Every animal created lives by the death of some other creation, either animal or vegetable. Man, the highest of all created animals, causes for his subsistence the widest destruction of life, and man in turn is devoured by the smallest of vegetable life. It seems a retributive justice, that he who makes for his own sub-

sistence the largest destruction of both animal and vegetable life, should in turn be destroyed by vegetable growths so small that only in the last few years have instruments of precision been developed with accuracy sufficient to demonstrate the existence and baneful work of these microbes. Although the science of bacteriology is of so recent an origin, the persistent studies of the few who have directed their attention to it have developed such an amount of facts that they have overcome the prejudices of ages. They have penetrated into the very heart of the ancient theory of disease and transformed and regenerated it. The causation of many diseases, which only a few years ago were regarded as the *opprobria medicorum*, is now thoroughly known, and the life-history of the disease germs that produce them is becoming more thoroughly understood, and when comprehended, preventive measures will be adopted.

Consumption carries off one-third of all people who die between fifteen and twenty-five years of age. Formerly it was taught that this was a hereditary disease. Its origin was unknown, now all intelligent persons are aware that it is produced by a disease-germ, the *bacillus tuberculosis*; that this disease is common to the cow and ox that are used for our food; that cooking the meat rare, with blood gravy, does not destroy these germs, but that we take them alive into our system. Foreign governments are moving for the protection of their people. In Berlin every animal is slaughtered at the public abattoir; then the name of the owner, the marks identifying the animal and twenty-four small sections, including all the viscera and various muscles are taken to the inspector's office. The particulars are entered in a ledger, and the specimens are sent upstairs to the microscopist. He has a slide with twenty-four squares on it marked and numbered. Each number always contains the same portion of the animal. Clippings of each are placed on its appropriate square, and a cover-glass is clamped on, and the examination is made; and the report—one tubercular, eight trichinæ, eleven cancer, or all healthy, as the case may be—is sent down, along with the microscopic slide, as the voucher, and the order to destroy the animal as unfit for food, or to certify it as healthy, is issued.

Careful inspection of the cows kept for milk, in Dutchess and Westchester counties, shows that you can hardly find a cow over nine years of age that is not consumptive; and on those farms where distillery-swill and brewer's grains are fed to the milch cows, their life is only a year to a year and a half in one of those stables before they are so far gone with consumption that they are slaughtered for the New York market, and those parts of the animal that they think will not pass the inspection are sold for the manufacture of bologna sausages. Where

tubercular deposits are found in the cow's udders, the bacilli are always found in the milk.

Careful examination of children who have died of marasmus, in many cases, shows the bacilli tuberculosis in the absorbents leading from the intestine and in the mesenteric glands, and in no other part of the body, showing conclusively that the milk furnished these children after weaning was the cause of their death. Typhoid fever is shown to be produced by a disease-germ that gains access to the body through the human intestine. No one has typhoid fever unless the germ from some other typhoid fever patient's intestine has been swallowed by him.

For more than a quarter of a century intelligent physicians have known that water contaminated with the stools of a typhoid fever patient would produce typhoid fever in those who drank it. A most horrible abuse of this knowledge was used to destroy the lives of Union prisoners during the war of the rebellion. Wurtz, an educated physician, arranged the prison-pen, at Andersonville, on the side of a hill, a stream wound round the hill into the ravine below. He established the privies at the upper corner of this pen near the river, where the soakage from these closets would run into the river, and compelled the men to get their water supply from the lower corner from this contaminated source. If any prisoner attempted to dig for fresh water, he was shot. The prison for the officers was in the ravine below, where the only water was this saturated from the privies.

The most interesting exhibit at the Centennial at Philadelphia was in the Army Medical Museum—of the intestines of soldiers who had died from typhoid fever thus produced. The intestines had been slit open and stitched to glass rods placed in tall glass jars. Six, eight, and even ten feet of intestine were shown, where you could not put a five-cent nickel on any part without covering an ulcer. These ulcerations in some places had eaten through the intestine, leaving holes as large as a silver half dollar. Wurtz's boast was that "he was killing more at Andersonville than Lee was at the front." This was only too true. This evidence of his atrocious cruelty can be seen at any time at the Army Medical Museum at Washington. Wurtz was the only person the Government hung after the close of the war.

These ulcerations are caused by a disease-germ. These germ are not content with attacking the intestines. They travel along the absorbents, breaking down the mesenteric glands and invade various organs, particularly the spleen. So abundant do they become in the spleen, that you can hardly drive a needle into the spleen anywhere without having germs enough adhere to the needle to propagate. I have thrust a fine platinum needle into the spleen a dozen times at random, and after each

thrust inoculated a separate tube—heating my needle red hot beforehand so as to destroy any germs upon it—and when cold giving a thrust, and every tube produced an abundant crop of typhoid germs. Chantemesse, director of the Bacteriological Laboratory of the College of France, has conclusively demonstrated that this germ was the cause of typhoid fever.

He investigated an epidemic at Pierrefonds, propagated the germ from the drinking water, and punctured the spleen of a patient on the tenth day of his fever, and propagated from this living patient's spleen the same germ.

The danger from water contaminated with the stools of typhoid fever patients was well shown on the Ohio River in 1887. From Bellaire, nearly to the mouth of the Ohio River, a *distance of nearly 800 miles*, nearly every town obtaining its water supply from the river was more or less affected with typhoid fever. Doctors Rushford and Cameron, of the Bacteriological Laboratory of the Medical College of Ohio, demonstrated before the Cincinnati Academy of Medicine the bacilli of typhoid fever in the water of the river. When there are impurities in flowing water for the typhoid bacillus to feed on, they **continue to multiply**.

The epidemic at Plymouth, Penn., shows that freezing does not kill the typhoid germ. Yet our people with all these facts before them continue to eat their meat rare, with blood gravy, and feed their babies with unboiled milk, and take in their summer's drinks, ice contaminated by the stools of the sick patients of Albany and Troy, and then wonder at the mysterious dispensation of Providence that carries off their beloved ones with consumption and typhoid fever.

The causation of cancer is also probably beginning to be understood. Much has been ascertained that goes to prove that we are indebted to our rare meats and blood gravy for the introduction into our own bodies of this destructive disease. Cancer is a disease common to the ox, the sheep, the horse, and the dog.

In an able article in the *London Lancet* for May 6, 1888, on cancerous disease in the British Isles, the highest mortality was associated with the principal river systems in those countries. In Scotland, with the exception of the Clyde, all the rivers are on the eastern side. The examination of the mortality map shows that all the counties on the eastern side of Scotland which are either traversed or bordered by fully-formed rivers, include a high mortality from cancer, without exception.

Mr. Haviland concludes his article by showing that cancer does not thrive in high dry localities where the soil is kept sweet by the absence of floods, and the nature of the rocks which either underlie it, or form its principal constituents, and that it does thrive and become very fatal

when floods prevail; where their emanations are sheltered and intensified, when vegetation is killed and decomposed, and when, after the floods have passed away, a rank herbage springs up, composed of sour grass and bitter plants, which scour and otherwise disease the horses, cattle and sheep that feed upon them. It has been shown that killing the animal does not kill the germ, *but that the germ of cancer lives in the juices of the animal long after the death of the animal.*

By the germ I do not mean the bacillus of Scheurlin, which, though frequently found in the mammæ of the female, has by no means passed the ordeal required of all germs before they can be admitted to be the cause of any disease. The germ of cancer is probably the nucleus of the cancer cell. *This cancer cell buds, and the nucleus passes out from the cell to establish an independent existence of its own.*

In the *British Medical Journal* for May 19, 1888, Ballance and Shattock report the most interesting demonstration of this budding of the cancer cell in sterilized tubes after *eight days' incubation*. Where these nucleoli, or granules, had broken through the original cell and were found in the connective tissue, other granules lying free in the cell-protoplasm though still connected with the nucleus by thread-like process. This is not in conflict, but in harmony, with previous knowledge of this disease.

Virchow, the great pathologist, to whom was submitted the clipping from the throat of the Crown Prince of Germany, in his latest work stoutly maintains that cancer is at first local and then constitutional; that the cancer cells proliferate in the same manner that ordinary gland cells do. Every good pathologist knows that the cancer cell is migratory; that from its original focus of infection it travels along the absorbents, attacks the glands in its neighborhood which the cancer cells invade and multiply in the gland, and disseminate into the tissues surrounding the glands. The study of the death-tables of London show that cancer has increased to an alarming extent in that city. Cancer has increased faster than the population has increased. It has increased as the wealth of the population has increased. It has increased with the increase of luxury of feeding, which means more flesh food. This horrible disease is the only one which has not diminished with the growth of sanitary knowledge.

Listen to a few facts from the records of the City of London. In the ten years from 1850 to 1860 the deaths from cancer had increased by 2,000 over the preceding ten years. From 1860 to 1870 the deaths from cancer had increased 2,400 over those of the preceding ten years. From 1870 to 1880 the increase reached 3,200 above number of deaths from cancer of the preceding ten years. The proportion of cancer was higher among the well-to-do classes than among the poorer classes.

The most abundant victims appear to be women, who eat much meat and take but little out door exercise. This progressive increase in the death-rate of cancer throughout England and Wales is worth noticing. In 1847 it was 2.7 deaths in every 10,000 of the population; in 1882 it was 5.3 deaths from cancer to every 10,000 of the population, or nearly double.

In this country, Massachusetts is the only State that for a long period of time has collected the causes of deaths from all its country towns, as well as its cities, and the same fact is shown by the death-statistics of Massachusetts. The number of deaths from cancer in 1867 was 2.9 to every 10,000 of the population; in 1886 the number of deaths had risen to 5.6 to every 10,000 of the population, or nearly double. Take the next fact that has been established. The immense majority of all cancers are of the digestive-tube or tract.

Strumpfell has collated an immense amount of facts; and when you put cancer of the mouth, throat, stomach and intestines together, you have seven-eighths of all your cancers; that is, Strumpfell shows, seven-eighths of all cancers are internal cancers, and that *over one-third of all cases are cancers of the stomach*. Strumpfell shows that a large proportion of cancers of the stomach *take their origin on an old ulcer of the stomach, "as if they were planted on it."* "*The cancer-growth forms around this ulcer as a nucleus.*"

(To be continued.)

REMARKS ON THE SOURCES OF PUERPERAL WOUND- INFECTION.

BY CHARLES JEWETT, M. D.,

Professor of Obstetrics, Long Island College Hospital.

Read before the Medical Society of the County of Kings, Dec. 17, 1889.

That so-called puerperal fever is primarily a puerperal wound-infection must be universally conceded. While a few years ago the bacterial origin of child-bed fever was accepted with more or less reserve, if accepted at all, it must now be regarded as established fact. How many and what are the particular micro-organisms concerned in the pathology of child-bed fever it is yet too early to determine. That the chain-cocci are the essential microbic factors seems probable if we regard the weight of authority which attaches to that opinion. It is

sufficient, however, for our present purpose, if we accept the fact that the bacterial agents in puerperal fever are those of ordinary wound-infection.

In earlier discussions of the subject, one of the most warmly contested questions in the etiology of child-bed fever was the causal relation of erysipelas. Recently that question has been reopened by the views of Fehleisen and Gusserow.

Fehleisen, who was the first to discover the microbe of erysipelas, declares the streptococcus of this disease and that of puerperal fever to be two different micro-organisms, and he believes, therefore, that the one disease cannot lead to the other.

Gusserow injected the peritoneal cavities of rabbits with pure cultures of Fehleisen's streptococcus, getting only negative results. On the strength mainly of these experiments he denies any direct etiological relations between erysipelas and puerperal fever.

Garrigues, in the chapter on Puerperal Infection, in the "American System of Obstetrics," just published, holds that erysipelas and puerperal fever are different diseases, and that while erysipelas may appear as a complication of the puerperal state it does not cause puerperal infection. As an argument against the identity of the two poisons he cites the investigations of Lusk and of Duncan who have shown by statistics that there is no constant relation between the seasonal curves of the two diseases.

It is chiefly from English authors, Garrigues asserts, the opinion has come that erysipelas may produce puerperal fever, but that English physicians have included diffuse cellulitis, a suppurative disease, under the term erysipelas.

Winckel, on the other hand, regards the contagion of erysipelas as one of the most virulent of child-bed poisons, and this opinion is in accord with the views of most clinicians. Winckel found in a parametric abscess Fehleisen's streptococcus, inoculations with which produced typical skin erysipelas in a rabbit ("Surgical Bacteriology," Senn). Other experiments and clinical observations have satisfied him that puerperal fever and erysipelas may each produce the other. Bumm, in a recent paper ("Arch. f. Gyn.," Bd. 34, Hft. 3), after a comprehensive discussion of the subject, concludes that the problem can best be settled by the bacteriological study of the question. He regards it as proven that between the streptococcus of pus, of puerperal fever, and of erysipelas there is no morphological nor culture difference. These views are confirmed by an overwhelming majority of observers who have investigated the subject by animal experiments. Numerous observations have proved that the streptococcus of puerperal fever may produce abscesses as well as true

erysipelas of the skin. Bumm declares, therefore, that the separation of streptococci into that of erysipelas and that of suppuration is purely artificial. "The streptococcus of pus, of puerperal fever, and of erysipelas are one, and opinions are constantly multiplying to that effect."

The views of Winckel and Bumm, fortified as they are both by bacteriological proofs and by enormous clinical experience and confirmed by a host of authorities would seem sufficient to set this question at rest. That erysipelas must be counted among the causes of child bed fever can scarcely be longer questioned.

The etiological relation of scarlet fever and of diphtheria to puerperal fever has never been wholly settled by clinical observations. The testimony of experience is conflicting. One of the most familiar experiences quoted in discussions of this question is that of Braxton Hicks. Out of sixty-eight cases of puerperal disease seen by him, he attributed thirty seven to scarlatinal poison ("London Obstet. Trans.," vol. xii.). Boxall, on the other hand, found septic complications in but one of sixteen cases of scarlet fever in child-bed. Not a single abnormal puerperium occurred in forty lying in patients exposed to the scarlatinal poison. In three hundred patients confined during an epidemic of scarlet fever in the hospital the morbidity did not exceed the average. In one case which fell under the writer's observation an attack of scarlatina immediately following labor was complicated with typical puerperal fever ending fatally. In others the disease ran its course with apparently no septic complications.

A like discrepancy of experience and opinion has obtained in regard to diphtheria as a source of puerperal infection. This question too has been apparently solved by the bacteriologists. Numerous observations have shown that the micro-organisms of wound-infection, at least streptococci, are frequently to be found in both diphtheria and scarlet fever. It is by reason of this secondary streptococcus invasion, and not the specific poison of these diseases, that they are in a certain proportion of cases liable to cause puerperal wound infection. A similar observation must no doubt hold good in many zymotic or other febrile diseases, as, for example, typhoid fever or small-pox. The specific poison of enteric fever or variola cannot give rise directly to wound-infection, but their suppurative complications may. On the other hand the fact must be recognized that any febrile affection in child-bed due to other causes than wound-disease, may act indirectly to favor puerperal infection. Impaired resisting and eliminative power induced by non-septic affections may favor sepsis; so too may the effect of high temperature upon the culture medium and the virulence of micro-organisms which ordinarily might remain innoxious.

The rôle of the atmosphere as a medium of wound-infection in child-bed is a subordinate one, yet it cannot be wholly denied as is done by many authorities. Infected dust is caught up by the air in motion to be deposited again directly upon the wounds as well as instruments, utensils, linen, and surroundings of the patient. Fortunately for the obstetric wounds, they are in a great measure protected from atmospheric contact and are less exposed than ordinary wounds to this mode of infection. The pathogenic power of dust, however, is chiefly limited to hospital wards or rooms of private dwellings which have been recently exposed to infectious wound-disease. The danger of atmospheric contagion is mainly confined to infected rooms and obtains there only when the dust of the room is disturbed and made to float in the air. This fact is strikingly illustrated by an experience in the midwifery section of the Hôpital Lariboisière, related by Pinard. In 1883, after the curtains of the lying-in wards had been taken down and newly hung, there was a general outbreak of fever with four deaths. Observations recently published by Burrell and Tucker, of Boston ("Boston Med. and Surg. Journal," vol. cxxi., No. 14) are instructive with reference to the relation of dust to atmospheric infection. In a series of "night experiments" conducted in the wards of the Boston City Hospital they found that when the air of the room was free from commotion it was practically free from microbes. After sweeping, a large number of micro-organisms were found in the air. On allowing them time to settle and again sweeping the number found was comparatively small. After the third sweeping the air was nearly germ-free.

The pathogenic power of the air of a room, then, is derived from local causes. The atmosphere at large is probably never the carrier of puerperal-fever poison. So-called epidemics of child-bed fever in cities and towns must be ascribed to contact-infection and not to atmospheric influence. The infectious agent is carried from house to house by the attendants. The practitioner cannot shift the responsibility from his own shoulders when puerperal fever follows him from case to case.

Attention has recently been directed by certain writers to the importance of sewer air as a source of puerperal infection. Among these are authorities of no less repute than Frankenhäuser, Lusk, and Playfair. Two cases of great interest have been recently reported by the London obstetrician ("Lancet," Feb. 5, 1887). In one of these cases the patient developed fever with septic symptoms soon after delivery. Several days later it was discovered that a concealed water-closet had recently been placed in the lying-in chamber near the bed. This closet had been connected with the main drain by a special soil-

pipe with no ventilation. On removing the patient to another room her bad symptoms subsided. The other case was that of a patient whose convalescence pursued a perfectly normal course till the eleventh day after confinement. She then left her bed and lay for a part of each day upon a sofa before an open fire. She became very ill, the temperature reaching 104° F. and the pulse 130 in course of a few days. Investigation by the smoke-test subsequently showed that the sofa stood directly in a current of sewer gas which poured from a defective drain toward the fire. The patient was removed to healthy surroundings in another house, and within twenty-four hours her temperature fell and recovery was rapid. The author remarks particularly with reference to the second case that there was nothing in the symptomatology different from an ordinary and rapidly progressing case of septicæmia.

It cannot be doubted that the symptoms were due to sewer gas but the history is surely unlike that of true septic infection. To say nothing of the fact that so late infection, as in the second case, is extremely rare, true septicæmia of several days' duration could hardly subside so promptly on mere change of surroundings. Are not the symptoms better explained as ptomaine poisoning from polluted air? Whatever the true theory of the foregoing cases it cannot be doubted that sewer air may, under certain conditions, be the bearer of true wound infection germs. Dangerous all such exposures certainly are and liable to end in septic disease if they do not begin with it.

Kucher cites the experience of the Vienna Lying-in-Hospital in proof of his claim that the poisoned atmosphere has nothing to do with the causation of child-bed fever. In front of this department of the hospital, he says, is a row of cesspools of immense barracks the foul emanations from which may often be detected by smell in the lying-in-wards. Under this wing of the building runs a large sewer in parts of which its contents must overcome gravity and travel up hill. In addition to this the site of the lying-in hospital was formerly a cemetery. Yet since the introduction of antiseptics the yearly mortality has been less than one per cent. where before the time of Semmelweiss a mortality of ten per cent. was not uncommon. Gustave Braun, however, of that hospital has recently had a mortality of 8.97 per cent. which he ascribes to the bad sewerage.

That puerperal wound-infection may occur through other avenues than the pelvic wounds themselves seems theoretically possible from the experiment of Rosenbach. He fractured one of the hind legs of a rabbit and then inoculated the ear with the streptococcus of pus. The result was an osteomyelitis with abundant microbes at the point of fracture and no disturbance at the seat of inoculation. The micro-organisms were carried in the blood and lymph streams to the point of

least resistance. It may be inferred that recent wounds may become infected in like manner from pre-existing septic lesions in remote parts of the body.

Still further, it is believed to be possible that old suppurating lesions may furnish the material for the infection of fresh wounds months and years after the healing of the original wounds. Lowered resisting power and the presence of a favorable soil may possibly kindle into activity pathogenic micro-organisms that have long lain encapsulated and dormant. Döderlein cites the case of a woman who died of purulent meningitis following abortion. Streptococci were found in purulent accumulations in the knee, middle finger and ankle. The patient had suffered an attack of erysipelas a year before and the softened cervical lymphatics were believed to be the source of infection. Experiences of this sort, however, must be classed among the rare curiosities of medical practice.

The observations of Hartmann point to the possibility of wound-infection by the respiratory tract. He has shown that streptococci may "sink into the mucous membrane of the upper air tract, filling the mucous and submucous lymph spaces." Recorded clinical experience bearing upon this question, however, is meagre and inconclusive.

The discovery by Winter of what he believed to be pathogenic micro-organisms in the cervical and vaginal secretions of healthy women has again raised the question of so-called self-infection. Auto-infection in the sense in which the term has been employed, particularly by certain English authors, must now be regarded as obsolete doctrine. As now used it refers to infection by bacterial organisms which have their habitat in the genital canal. The term is a misnomer since even these are imported germs and all infection therefore is from without. Whether the genital germs are in part pathogenic as Winter claims, and to what extent the lying-in woman is liable to be infected owing to the primary condition of her own genital secretions are questions upon which opinion is still divided. In the event of catarrhal inflammation and muco-purulent discharges there is undoubted danger. Yet even in these conditions, not excepting the acute stage of gonorrhœal inflammation, general or even local sepsis after labor is by no means the rule. The point in dispute is the possibility of infection from the normal genital secretions. This question is at the present time attracting much attention in the German clinics and gynæcological discussions. It seems probable that Winter and his followers have been led into error and that the organisms he found, as Ernst suggests, were not pathogenic at all. Gönner, Bumm, Thomen and others have failed to confirm his observations and they contend that the bacteria of the healthy cervical and vaginal tract are innocuous.

Clinical experience emphatically substantiates the latter opinion. At all events it justifies the prevailing practice of this country which has long since renounced preliminary vaginal disinfection as a routine measure. Steffek has followed the practice of sterilizing the vagina and cervical canal at the beginning of labor and several times during its progress till agar glasses inoculated with the genital secretions remained sterile. Döderlein and Günther have pursued a similar method. Yet their results have not been better than the best attained in other clinics in which preliminary disinfection of the internal genitals was not practised, nor indeed have they been as good.

Leopold, for example, reports 79 per cent. of perfectly normal temperatures in child-bed without internal disinfection; Döderlein and Günther only 70 per cent. in which the post-partum temperature did not exceed 38° C., with the birth-canal rendered sterile. The extreme measures of the Leipsic clinic were apparently more noxious than the genital germs, and we must conclude with Bockelmann (*Zeitschr. f. Geb. B.* xvii., H. 2) that the extremists have not yet proved their case.

But the most remarkable experience bearing on this question is that of Leopold in cases delivered without internal examination. In 427 confinements at the Dresden clinic in which no vaginal examination nor irrigation was made, a rigid external and subjective asepsis being enforced, only $1\frac{1}{10}$ per cent. had a temperature above the normal (38° C.) during the puerperal period. These results not only go far to establish the fallacy of Winter's conclusions, but they also show how insignificant are all other modes of infection in comparison with the direct inoculation of the genital wounds by the hands and instruments of the attendants. They place the responsibility for puerperal wound-infection almost solely upon the obstetrician himself.



ACCIDENTAL SEPARATION OF THE SYMPHYSIS PUBIS DURING LABOR.

BY GEORGE McNAUGHTON, M.D.

Read before the Medical Society of the County of Kings, Dec. 17, 1889.

If we were to judge of the frequency of this accident by the amount of space given to its consideration in our text-books, we should conclude that it must be very rare. Some authors do not even mention its occurrence; Lusk devotes a few lines; also in the "American System of Obstetrics" may be found an article written by Dr. E. P. Davis. This subject is more fully considered by the German and French writers.

One contributor, Ahlfeld, believes that injuries to the bony pelvis are not infrequent, and that the physician should always look for them after a particularly hard or tedious labor.

This accident doubtless occurs more frequently than has been reported. Some physicians fail to publish their cases, either because of indifference on their part, or that they do not wish to make public the fact of such a lamentable accident.

At the time that I was in attendance upon the unfortunate woman who was the subject of this injury, I naturally turned to my books for guidance as to treatment, prognosis, etc., but found the information from that source very unsatisfactory. Moreover, my consultants were not full of suggestions: hence my desire to present the following history for your criticism:

In the latter part of November, 1888, Mrs. ———, a strong, healthy-looking woman, medium size, twenty-three years of age; menstruation regular, but somewhat painful, occurred the last time about August 1st. She informed me that the sexual act had never been completed, because of the excessive pain which was produced at the instant of contact. She was placed on my table for examination, and the attempt to make digital exploration was attended by excruciating pain. At the same time the patient would extend her legs, with her knees touching, rendering examination impossible. Thinking I might succeed by the use of cocaine, I tried to apply it to the vaginal orifice; but with no better success. I then asked the patient to make application of the same by means of absorbent cotton, which she did, and the result was the same, so far as my examination was concerned.

On the following day a friend administered ether, and I succeeded in making an examination. The hymen was found intact, and even under profound anæsthesia the muscles about the vaginal entrance continued to contract. The parts were stretched, care being taken to destroy as much of the hymen as possible. The uterus was found enlarged. That, with other signs, led us to believe that the patient was pregnant at least three months. She was advised to use a large bougie every day. This, with the use of cocaine locally, made, I understand, sexual intercourse possible.

The patient remained in good condition. Nothing unusual occurred to attract attention until the commencement of labor, May 7th, about 4 o'clock A. M. I was called to see her at this time, and, on attempting to make vaginal examination, found the same resistance as was offered on the occasion before mentioned. Therefore, of course, my examination was unsatisfactory. I satisfied myself, however, that she was in labor, and that I could be of no immediate use. I saw her at intervals of a few hours until the next day at noon. She was in

excellent condition, os dilated, pains regular and vigorous but ineffectual.

It has been and is my custom to postpone the use of forceps as long as possible, at least until I am satisfied that no further progress is likely without their aid; then I advocate their use, and insist on their application.

I asked a friend to consult and assist. He made an examination, and advised the immediate application of the forceps. The head presented L. O. A. I think it was scarcely engaged at the brim. I put on the forceps (Simpson's long double-curved); they were applied within the uterus, the handles pressed well back on the perinæum, and as great traction as I dared was made, without, so far as I could ascertain, moving the head a particle; this traction was repeated several times, with like result. I then asked my consultant to try; he being much less muscular than myself, I scarcely expected he would succeed. I made pressure over the fundus at the same time that he made traction. At second attempt he thought he had started the head; at his third we were both sure something had been started, for we were conscious of a distinct shock, and I believe both thought the forceps had slipped. On investigation, such was found not to be the case, but the head had come down a little. Traction was again made, and a second sensation (like the first) was experienced.

It would be impossible for me to say whether or not an audible crack occurred. I am inclined to think, however, such was not the case, but that we were made aware of something unusual through our sense of touch.

The child was quickly brought into the world, and its arrival was followed by a tremendous gush of blood, which did not seem to come from the usual source.

On examination, my finger passed through a slit in the anterior vaginal walls, to the right of the urethra (as afterward ascertained), up to the separated pubic arch. The points of bone were separated about one inch, and felt like bone denuded of its periosteum.

We at once realized the fix our patient was in, and the proper treatment next claimed our attention. We proceeded to search for the meatus urinarius, which was found only after considerable trouble; a catheter was introduced, and the urethra put in its normal position, held there, and the vaginal rent stitched together. No drainage-tube was introduced, but I am quite certain that if pus or fluid had been present there would have been sufficient space for its escape.

Antiseptic precautions were carried out. A tight bandage was placed around the hips, the knees and feet were tied together, and an opiate was administered for the relief of pain, which was excruciating

in the back and region of the symphysis pubis. Catheter was used for two days, after which the patient was able to pass her water naturally.

A general peritonitis developed, which continued to grow worse until her death on the ninth day after delivery.

Autopsy not allowed.

I neglected to state that the baby was born alive, and was not unusually large; it bore some traces of forceps pressure.

As to the cause of rupture of pelvic joints in labor: undoubtedly some women are predisposed to these injuries at this time. This predisposition may be congenital or acquired; in the latter case it is probably due to some inflammatory process affecting the bones or joints. It has been shown by experiments that an enormous force is required to separate the pelvic joints in cadavers of pregnant women; even then it is not always possible.

The most frequent immediate cause is of course too much force in expulsion or extraction. In my case I do not think too much power was used in extraction, for the simple reason that in the operation such power did not exist. The direction of traction might have been, and probably was, changed slightly by my consultant.

There has been one case of separation of symphysis pubis reported which was said to have been caused by the passage of an immoderately enlarged and hardened placenta in an osteo-malacic pelvis. Separation of pelvic joints is most apt to occur in pelves that are generally contracted. In many cases which have been reported—in fact, most of the cases—the diagnosis was not made at the time of the accident. The symptoms are, however, quite marked, even when the separation is slight.

Women complain of great pain in region of the sacro-iliac synchondrosis, one or the other or perhaps both; also at the pubic joint. Ahlfeld states that any two or all three of the pelvic joints may be separated at the same time; the most frequent two being the left sacro-iliac synchondrosis with the symphysis pubis, the next being the right with the symphysis, the most rare—both synchondroses.

If difficult mobility of the legs continue longer than one day after delivery, attention should be directed to the pelvic joints. Dribbling of urine is also a suggestive symptom.

To examine the patient, place the thumbs over pubic symphysis, so that the tips lie over the supposed point of rupture; press alternately. By these manipulations we can discover whether motion is present, and if patient experiences increased pain; if so, proceed to make an internal examination. Sometimes the separation of the soft tissues will enable one to introduce his finger between the points of bones.

If a separation of the sacro-iliac synchondroses is present, pressure toward the centre, from each wing of the pelvis, will produce sharp pain in the affected joints. This may be repeated, and, if the same results are produced, a further examination is indicated; then place the patient on her side, in which position the condition can be positively made out. In case of separation of sacro-iliac synchondroses, internal examination is of little use. The degree of separation is variable.

The operation of symphysiotomy at one time attracted much attention, and has recently been revived.

Baudelocque found that when the separation at the symphysis amounts to one inch or more, the antero-posterior diameter is increased scarcely one fifth ($\frac{1}{5}$) of one inch; this has been verified by others.

In a certain proportion of cases of separation of symphysis a callus is formed between the points of bone, and a natural cure results. Far more frequently, however, an abscess forms, which usually ends fatally within three weeks.

The chief means of treatment is in the application of a pelvic girdle or bandage. The upper part of the binder should come below the spine and crest of the ilium, since otherwise the posterior synchondroses will be disturbed; if patient cannot stand the binder, she may be placed on her side. At the time that my case was under treatment we considered the propriety of suturing the points of bone, as is done after fracture of the patella.

Incomplete cures and fatal results occur even when the diagnosis is promptly made and the proper treatment applied. Patients, when they get better, have trouble in locomotion for a long time. Some women, who were incompletely cured, were easily delivered at subsequent confinements. Callus, in one case noted, proved an obstruction.

Prof. Ahlfeld, who has treated this subject more thoroughly than most writers (*"Schmidt's Jahrbuch,"* vol. clxix.), reports nine cases of pelvic injuries observed by himself, as follows:

CASE I.—Complete separation of symphysis, with secondary separation of both synchondroses, after forced forceps-extraction: Death.

CASE II.—Inflammation of left sacro-iliac synchondrosis during pregnancy; severe pain during delivery: Cure.

CASE III.—Easy birth; normal pelvis; inflammation of pubic symphysis: Cure.

CASE IV.—Extraction of a large child in 3d head position; separation of symphysis: Cure.

CASE V.—Birth in knee-cowering position; lacerated pubic symphysis; peritonitis: Death.

CASE VI.—Mature child in 3d head-presentation; moderately, generally contracted pelvis; rupture of right sacro-iliac synchondrosis: Death.

CASE VII.—Perforation and cephalotripsy in a generally contracted pelvis; endocarditis: Death.

CASE VIII.—Easy forceps-extraction; cross presentation of head; painfulness in both synchondroses: Cure.

CASE IX.—Long retention of head in pelvic entrance; occiput posterior; forceps, moderately difficult; injury to right synchondrosis: Cure.

He appends a full literature, to date, of injuries to the pelvic bones and joints.

This author, you will notice, reports nine cases of all kinds of injuries to the pelvic bones and joints, four resulting in death. A study of the cases shows that some were probably slight injuries—in fact, one was an inflammation of the joint during pregnancy, and no separation at time of delivery. However, by this article we must be convinced that injuries to the pelvic joints are always grave and deserve careful attention.

The latest writer on this subject is Dr. A. Dührssen (Berlin, 1889, "*Arch. f. Gyn.*," vol. xxxv., part i.), "On Rupture and Suppuration of Pelvic Joints during Birth and the Lying-in Period." His conclusions, which were based on one case observed by himself and thirty-two reported by others, were as follows:

"The dictum of text-books, that the prognosis in symphysis suppuration is unfavorable, is in this sense not correct. We must not, as heretofore, include cases with general pyæmia or septicæmia, since in these the prognosis does not depend on symphysis suppuration.

"Excluding these cases, the prognosis depends wholly on kind of treatment. It is only unfavorable when not incised. Cure without incision only results when an open rupture with free discharge of pus is present. After such discharge cure usually results by bony callus.

"The causes of symphysis suppuration are (pyæmic) metastatic inflammation of the joints; infection (non-septic nature) through vaginal wound, which, under certain circumstances, does not develop until the lying-in period; and tuberculosis.

"A continuous fever with painfulness and tumor at symphysis indicates a suppuration at this point. Suppuration of a non-ruptured symphysis may be easily overlooked.

"Incision should be done early, to avoid burrowing-abscesses.

"The manual delivery of the after-coming shoulder cannot produce rupture unless a previous disease of this joint was present.

"Of seventeen cases of suppuration of symphysis pubis, treated without incision, all were fatal. Seven cases of suppuration of this joint, with primary incision into the joint or subsequent spontaneous discharge of pus, all recovered."

Dr. Dührssen's method of treatment is of course correct, if suppuration of the joint occurs; incision would be imperative: but it seems hardly fair to exclude a consideration of the worst cases—that is, those accompanied by an early peritonitis—in making a basis for prognosis.

In Aschenbach's thesis (Berlin, 1888) the single case of Dührssen is given in detail.

So far I have been unable to find an original case reported from America.

TECHNICAL METHODS FOR THE CENTRAL NERVOUS SYSTEM.

BY E. H. WILSON, M. D.,

Attending Physician and Pathologist to St. Catharine's Hospital.

Read before the Brooklyn Medical Microscopical Society, Dec. 4, 1889.

Mr. President—Gentlemen :

The object of my paper this evening is not the description of anything original nor especially new—in fact, most of the methods I shall endeavor to describe are a few years old, and may seem tedious to those who work with them constantly; but I am satisfied that a sufficient number of members of the Society will be interested in them to justify me in occupying your time in their description and in exhibiting these specimens to you.

Some of the specimens I have prepared by methods practised by me for the first time, namely, those illustrating Pal's modification of Weigert's method and those of Upson's gold method. If they do not come up to the description of their originators, it must be attributed to faulty technique or inexperience.

In the rapid advance in general histological and pathological technique, that of the central nervous system has had its full share; and almost every month brings forth some new method or modification in addition to those already known. Many of these methods have been tried and abandoned as useless or unreliable, and it is only my purpose to speak of a few which have withstood the test of time and trial and

are in use more or less extensively at the present time. These methods are some of them for histological purposes, some for pathological; but all of them are intended to bring out or differentiate some particular element in the structure of the tissue.

I wish first to speak of Golgi's method.

GOLGI'S PROCESS.

Golgi published his first article on this method, "Researches in the Histology of the Nerve-Centres," in the *Italian Archives of Biology*, in 1883. It did not excite much interest in this country, however, for several years, and even at the present time very few histologists have worked at it, and very little has been published about it in English. It is used to bring out the ramifications of the prolongations of the ganglion-cells of the cerebral cortex, and consists essentially of a deposit of bichromate of silver in these prolongations, and depends upon the presence of chrome salts in the tissue.

Small pieces (1 to 2 c. c.) are placed in a two-per-cent. solution of potass. bichrom., or Müller's fluid, containing camphor, to prevent the formation of bacteria; this solution should be frequently renewed, and at each renewal the percentage of potass. bichrom. should be increased up to about five per cent.

The length of time required for the hardening process will vary with the size and quantity of the material and with the temperature. It is very desirable to have a constant temperature, although this is not necessary. In summer specimens will harden in from fifteen to forty days, usually in about twenty days. In winter a much longer time is required, five to six weeks, and often longer, are required. The hardening can be somewhat hastened by adding to or replacing a part of the fluid by Erlicki's fluid¹ in increasing proportions, or by after-hardening in a mixture of 8 parts of a two-per-cent. solution of pot. bichrom. and 2 parts of a one-per-cent. solution of osmic acid.

The hardening is a very important step in the method, and should be carefully done until the specimens are of a dark-brown color. If it is underdone, the tissue will not contain enough of the chrome salts; and if it is overdone, the sections are apt to be very brittle.

It is not well to after-harden these specimens in alcohol, as this will remove the chrome salts. The hardened pieces are removed from the Müller's fluid and placed in water and washed, then in a three-quarters of one-per-cent. solution of nitrate of silver, by which a chromate of silver is precipitated; this solution should be renewed from time to time until this precipitate no longer forms. If the duration of the

¹ Erlicki's fluid : Pot. bichrom., $2\frac{1}{2}$ parts ; CuSO_4 , $\frac{1}{2}$ part ; H_2O , 100 parts.

hardening process has been a long one, it is well to increase the strength of the silver solution to one per cent. The blocks remain in the silver solution from twenty-four to forty-eight hours; usually from twenty-four to thirty hours will suffice. These blocks can be afterward preserved in dilute alcohol, seventy per cent., or, better still, in water containing camphor. Their preservation in strong alcohol will injure them considerably. It is well to cut the sections by hand, and not to imbed the blocks in celloidin, although sections turn out very well in this way. Sections of considerable thickness are preferable, because in them we can follow the course of the processes to greater advantage, and, as the background is almost colorless, it does not interfere with their examination. After the sections are cut, they are carefully washed in alcohol, and need not be protected from the light. They are then cleared in creasote; the creasote should be of the dark variety, and mounted in balsam or dammar.

Sublimate Process.—The same result can be obtained by using, instead of the silver solution, one of a half per cent. of bichloride of mercury and using the same as the silver solution; it has the disadvantage of requiring more time (several weeks), but the advantage that larger pieces can be stained in this way.

Sections of Golgi's blocks covered with an ordinary cover-glass do not keep well; they are very apt, after a while, to show changes in the stain. These changes are supposed to be due, according to Golgi, to the presence of lead in the cover-glass; and, to obviate this, he simply covers his sections with successive layers of dammar varnish. These sections show the ganglion-cells, with their processes sharply in black, against a faintly yellowish background.

It does not seem to me that a sufficient amount of attention has been paid to this method by pathologists; so far as I know it has never been used in pathological work in this country, and it would seem probable that some obscure points in cortical pathology might receive some light from this method. The only disadvantage is its uncertainty. Some pathologists in this country have tried it, and been dissatisfied with their results. While I cannot reproduce Golgi's beautiful plates, I show you some specimens (Nos. 1 and 2) which illustrate the silver process fairly well.

Some modifications of Golgi's methods have been made. Pal's modification consists of immersing Golgi's blocks in a half- to a quarter-per-cent solution of potass. sulphite. This modification applies to either the silver or the sublimate process. In the one it converts the silver salt into a sulphide, and in the other it probably converts the mercury salt into a sulphide or oxide. Dr. Van Gieson, in a *résumé* of Golgi's methods, in the *Journal of Nervous and Mental Disease* (May,

1887), claims that the silver process is more satisfactory when Pal's modification is used.

As regards the results of Golgi's methods in different organs: Pal states that it stains the neuroglia-cells the same as the ganglion-cells, and that he was more successful with the neuroglia-cells of the white matter. Pal obtained the best results in the cortex; the cerebellar sections were not so successful, and the sections of the cord were unsatisfactory.

There is another point in reference to celloidin-imbedded sections which I may mention. When the section is placed in creasote, the creasote causes the celloidin to contract, and thus to deform the section. This may be obviated to a certain extent by making incisions through the celloidin, at various points, with a pair of scissors.

Some workers with Golgi's method have cleared their sections in oil of cloves, and claim that the after-changes are not as great. But I find that oil of cloves does not give as clear a background as creasote, and, besides this, it cannot be used in celloidin-imbedded specimens.

The black reaction in the Golgi stain has been shown by Rossbach and Sehrwald ("Centralblatt für die med. Wissenschaft," June, 1888) to be due to a deposit of bichromate of silver in the pericellular spaces and in the spaces around the axis-cylinders, and not in the cells themselves; and we really see the rounded outlines of these spaces. It is very probable that in many of the methods dependent upon the "mordanting process" the color is deposited in spaces left by nature or by unequal contractions in hardening: so that, after all, many of these stains are really "space-stains."

WEIGERT'S METHODS.

Among the best of the recently introduced methods are those of Weigert. Weigert has devised two methods for the selective staining of nerve-fibres: one is the acid-fuchsin method, and the other is the hæmatoxylin method. The former is much the simpler of the two, but is not as good, because it does not differentiate as well between the nerve-fibres and surrounding tissues as the latter.

Acid Fuchsin.—In the acid-fuchsin method, sections cut from blocks hardened in Müller's fluid, and afterward in alcohol, are placed for from one to twenty-four hours in a saturated aqueous solution of acid fuchsin. It is necessary, in order to secure good results, to use a particular kind of acid fuchsin for this purpose; that known as acid fuchsin "S," of the Baden Anilin factory, is the one which best answers the purpose.

When the sections are removed from the fuchsin solution, they are

very dark and opaque; they are to be rinsed in water for an instant, then placed in a solution composed of sat. alcoholic solution caustic potass., 1 part; alcohol, 10 parts. They are left in this solution only a short time; a few seconds will suffice. The sections should be handled separately. They are observed to lose their color, and change from almost black to a very light color. A too long exposure to the alkali will result in the total decolorization of the specimens. The sections are now removed to water, which should be changed two or three times, to thoroughly remove the alkali; it may be necessary to wash them in dilute HCl (1 to 5). They are then dehydrated in alcohol, cleared in oil of origanum, and mounted in balsam. Glycerine will remove the stain in time. The fuchsin colors the tissue diffusely; the potash removes the color with different rapidity from the elements of the tissue. The nerve-fibres being more tenacious of the color than the other structures, the stopping of the process of decolorization at the right moment secures the differentiation. The network of nerve-fibres stands out distinctly in red, owing to their deeper color than the surrounding tissues, which, however, are faintly stained.

This method is not new, and has been superseded by the more satisfactory hæmatoxylin method.

*Hæmatoxylin*²—The hæmatoxylin method is much more satisfactory and much more difficult, but the results obtained more than compensate for the extra manipulation. In order to attain certainty with this method, the reagents should be pure and the solutions carefully made. Sections cut from blocks hardened in Müller's fluid, with as little after-hardening in alcohol as possible, are placed for from twelve to twenty-four hours in a saturated aqueous solution of neutral cupric acetate which has been diluted with an equal bulk of water. If the solution is not neutral, a few drops of ammonia will neutralize the acidity. In this solution the sections will attain a slightly greenish color. They are then removed to water, which should be changed two or three times, to thoroughly wash them, then rinsed in alcohol; if they are not thoroughly rinsed and washed, they will cause a precipitate in the hæmatoxylin solution, into which they are now transferred. This solution is made as follows:

Hæmatoxylin crystals,	-	-	-	-	-	-	1 grm.
Alcohol, 97 per cent.,	-	-	-	-	-	-	10 c. c.
Water,	-	-	-	-	-	-	90 "
Sat. aqueous sol. lithium carbonat.,	-	-	-	-	-	-	1 "

In this solution the sections will be observed in a few moments to become black. They should remain in the solution for periods vary-

² Fortschritt der Medicin, vol. iii., No. 8, p. 236.

ing from two to twenty-four hours, according to the intensity of the stain required. When they are removed they are quite black and opaque. They are again washed in two or three waters, rinsed in alcohol, and then transferred to the bleaching solution, made as follows :

Potass. ferricyanid ,	-	-	-	-	-	-	2.5 grms.
Sodium biborat.,	-	-	-	-	-	-	2.0 "
Water,	-	-	-	-	-	-	200.0 c. c.

In this fluid, after a moment, the sections discharge a brownish color, and gradually the differentiation between gray and white matters appears. They should be allowed to remain until the white matter is of a bluish black and the gray matter of a distinct yellow color; this usually takes place in from a half to one hour. The sections are now again washed in water, dehydrated in alcohol, cleared up in oil of organum, and mounted in balsam or glycerine. The sections may be restained with alum or borax carmine before the dehydration, to bring out the nuclei. The effects produced by this method amply repay one for the trouble. The gray matter, ganglion-cells, and connective tissue elements have a yellow color, while the nerve-fibres are stained black or black-blue—that is, the myelin-sheaths are stained black or black-blue, the axis-cylinders are slightly or not at all stained.

It is well to see that the balsam in which they are mounted does not have an acid reaction, as this will result, after a time, in the fading of the stain.

This method is very well adapted to the study of the cortex, cord, or medulla; and, as illustrations of it, I show you sections of each.

All of these specimens are placed under low powers, and I ask you particularly to notice the emergence of the fibres of the nerve-roots and the commissural fibres in the cord sections, and, in specimen No. 5, to notice the comparison between the columns of Burdach and the columns of Goll; in the sections of the medulla to notice the olivary bodies and the fibres of the median raphé; and in the other sections of the cord to notice the difference between the lateral columns and the columns of Goll and one column of Türck. In acute myelitis the stain does not show as well, owing to the swelling of the fibres and to the exudation into the cord, and degeneration of the myelin.

A new method has been devised by Weigert for the neuroglia; but the details have not yet been published in full,³ although I believe Dr. Biggs presented some specimens to the N. Y. Pathological Society, which he had obtained from Weigert.

³ Centralblatt f. Nerven-Heilkunde, xii., 1889: Neue Methode der Neuroglia-Färbung.

A modification of Weigert's hæmatoxylin method has been devised by Pal, which very much complicates the process, but which does away with the copper immersion. It is recommended by Freud, of Vienna, who says that the differentiation is sharper than by the original method, and that it is better adapted for serial sections. I have not been able to find any one who has tried Pac's modification and found considerable difficulty with it. In the first place, he adds 2 or 3 c. c. of sat. sol. lithium carbonate to that which Weigert's solution originally contains. The sections are allowed to stay in this modified solution for from twenty-four to forty-eight hours; the sections are then washed in water, and should show a deep blue color: if they do not show this color, 1 to 2 c. c. of the lithium carbonate solution are added to the water in which they are washed. The sections are then transferred for twenty to thirty seconds to a quarter per cent aqueous solution of potass. permanganate, when they are rapidly decolorized. They are then placed in a solution composed of:

Oxalic acid,	-	-	-	-	-	-	-	1 part.
Potass. sulphite,	-	-	-	-	-	-	-	1 "
Aquæ dist.,	-	-	-	-	-	-	-	200 parts.

And allowed to remain only a few seconds.

I have not practised the method sufficiently to obtain uniformly certain results. The permanganate solution causes very rapid decolorization, and the oxalic acid still further decolorizes the sections. Another difficulty which I encountered was that the dark-blue color, after the hæmatoxylin staining, was not always obtained.

Pal claims that these specimens are better adapted for contrast-staining than the original ones, and used this modification as an after-stain in specimens prepared according to Golgi's methods.

In specimen No. 7 you will see the differentiation very well; there is sclerosis confined to the crossed pyramidal tracts, which shows quite well by examining the section with the naked eye.

In connection with Weigert's methods of staining, I would like to say a few words about Weigert's method of handling serial sections. This method is very ingenious and very satisfactory; by it the sections are not liable to be confounded, and are stained uniformly, as they are all stained together. The method consists of holding the series of sections between two adherent films of celloidin. A glass plate of sufficient size to accommodate the sections (all sizes, from a slide to a Koch culture-plate, are used) is coated with a thin film of celloidin: the plate should be very clean and washed with ether and alcohol, and the celloidin solution should be very thin. This coating is left to dry, preferably over night. The series of sections are now cut with a micro-

tome, and taken off as they are cut on a strip of tissue-paper (toilet paper is best) which has been laid upon a piece of blotting-paper wet with eighty per cent. alcohol: the sections should not be allowed to get dry. After the series is complete, the tissue-paper slip is removed from the blotting-paper and turned section-side down upon the celloidin film on the glass plate. Gentle pressure is now made upon it, and the tissue-paper is carefully removed, leaving the sections in a row or rows on the glass; if any additional alcohol remains around the sections, it is to be absorbed with blotting-paper as quickly as possible, another film of celloidin is poured over the sections and entirely covering the plate; this can be done by inclining the plate in different directions. After a short exposure to the air, about two minutes, the plate is immersed in water, specimen-side up. In a short time, varying from a few minutes to an hour, the film containing the sections between its layers will become detached from the plate and float to the surface. This is practically the whole method. The film with the sections can now be handled by removing it from the water on tissue-paper, stained either whole or in parts, as may be desired, by any of the methods, and mounted on large plates with special cover-glasses.

The special points about this method are: to have the glass clean, to have the celloidin solution thin enough, and to leave the sections a long time in the clearing-oil, as the celloidin clears up very slowly. The dehydration should also be very thorough, and done in ninety-seven per cent. alcohol, so as not to dissolve the film. If it is necessary to mark off the celloidin, to designate any group of sections, this can be done by a brush dipped in a solution of methyl blue.

Very often difficulty is experienced in getting the film off the plate. A very good way of overcoming this is to first coat the plate with a layer of gelatine before pouring the celloidin over it; if this is carefully done, it is pretty sure to come off without much trouble.

CARMINE STAINS.

Of the carmine stains, probably that by the borax-carmine formulæ of Grenacher answers as well as any. Grenacher gives two formulæ: In the first he dissolves 2 or 3 grms. of carmine in a solution of 4 grms. of borax in 100 c. c. of alcohol; filters, and, after a week, filters again. The other formula, which is the best, known as the "neutral borax carmine," is as follows: 0.5 to 0.75 gm. of carmine is boiled in a solution of 2 grms. borax to 100 c. c. water; the solution is filtered and acetic acid added until the solution changes from purple to that of ordinary carmine; it is then refiltered. Sections stain in a few minutes a diffuse intense red. They are then rinsed in a watch glass of seventy per cent. alcohol, to which has been added 1 drop of hydrochloric

acid. The color is withdrawn from everything but the nuclei. This stain is open to the objection, common to all carmine stains, of being diffuse and not selective.

PICRO-ACID-FUCHSIN METHOD.

Another method, which is well adapted to the study of the nervous system, and is, in fact, a good "all round" stain, is one devised by Dr. Van Gieson, and used extensively in the laboratory of the College of Physicians and Surgeons. It is the picro-acid-fuchsin method. Sections cut from specimens hardened in Müller's fluid and alcohol, or alcohol alone, and imbedded in celloidin, are at first rather darkly stained with hæmatoxylin, preferably Delafield's solution: they are then washed in water and placed for a few moments in a solution of acid fuchsin and picric acid, made by adding, to a saturated aqueous solution of picric acid, a saturated aqueous solution of Grübler's acid fuchsin, drop by drop, until the solution has a garnet color. The sections are then washed in water, dehydrated in alcohol, cleared in oil of origanum, and mounted in balsam. By this method the ganglion-cells, neuroglia, blood-vessels, and sclerosed areas are selected and stained of a garnet color; the axis-cylinders are stained red and the myelin yellow. This stain is also well adapted to the peripheral nerves and to all tissues in which picro-carmine is used.

GOLD METHODS.

In speaking of gold, I wish to mention the methods of Fleschsig, Freud, and those of Upson.

Fleschsig's method, as described in the latest edition of Birsch-Hirschfeld, is as follows: The tissue should be hardened in Erlicki's fluid; the sections are placed for four or five hours in a watery solution of one per cent. of gold chloride, with an equal bulk of ninety-five per cent. alcohol; they are then removed with wooden instruments and washed in water; they are then placed for from two to five minutes in a solution of caustic soda (1 grm. to 5 or 6 grms. water): here they become transparent: they are then washed, dried, and placed in a solution of iodide of potassium, ten per cent., where in five to ten minutes they assume a red color; they are then washed, dehydrated, and mounted in balsam.

Freud's method is exactly similar, with the exception of diluting the gold solution with an equal bulk of water instead of alcohol.

In successful specimens, stained by these methods, the ganglion-cells, axis-cylinders, and often the myelin-sheaths, are sharply stained. The stain results from the reduction of the gold to the form of an oxide or metallic gold. The methods are not very reliable and not well adapted for staining sections in series.

Upson⁴ claims that reduction of the gold can be effected with greater certainty by the careful employment of one of the following methods :

Method No. 1.—The piece of tissue from which the sections are to be cut is hardened in Müller's fluid for from two to five months; it is then washed in water, placed for two days in fifty per cent. and then for two months in ninety-five per cent. alcohol; it should remain in the alcohol until it has a greenish tinge; it is then imbedded in celloidin by the usual process, and sections are cut. The sections should remain in eighty per cent. alcohol for periods varying from a few days to several weeks before staining. The section to be stained is first rinsed in water and then placed into an aqueous solution of gold chloride, one per cent., for from ten to thirty minutes; it is then washed superficially in water and then immersed for half a minute in a ten-per-cent. solution of sodium hydrate; it is then again rinsed in water, and then placed in the reducing fluid, made as follows :

Sulphurous acid,	-	-	-	-	-	-	-	-	-	c. c. v.
Tr. iodine, five per cent.,	-	-	-	-	-	-	-	-	-	gtt. v-x.
Solution ferric chlorid.,	thirty-seven per cent. (official),									gtt. j.

Here, after a few minutes, it assumes a red color; it is then again washed in water, dehydrated in alcohol, and mounted in balsam.

The sections should be handled with platinum needles or some non-metallic substance, as an iron needle will streak the specimens.

The reducing fluid should be always freshly made before using.

Dr. Upson says that the changes which take place in this process are as follows: "The potassium bichromate of the Müller's fluid is converted in the tissue to a brown chromium dioxide or a green chromic oxide; the oxides of chromium are replaced by the gold salt, which is converted into a trihydioxide by the sodium hydrate, and into a red oxide by the reducing fluid. In specimens stained in this way the stain varies with the length of time that the cut sections have been in alcohol. If they are stained immediately after being cut, the stain is more or less diffuse, but differentiates after being mounted about a week; if they have been in alcohol a few days, they take a lighter stain, which is almost confined to the ganglion cells, axis-cylinders, and myelin-sheaths. If the sections have been a week or so in alcohol, they take a stain which is confined to the axis-cylinders and myelin-sheaths, the ganglion-cells not being stained. If the sections have been longer than a week in alcohol, the stain is very apt to be confined to the myelin-sheaths and finer axis-cylinders, and these sections very much resemble those stained by the Weigert method."

⁴ Henry S. Upson, Cleveland, Ohio: *Journal of Nervous and Mental Disease*, November, 1888.

The sections of the cord, in specimens Nos. 20 and 21, are stained by this method. They had been in alcohol over a week, and you will see that they resemble somewhat the sections stained by the Weigert hæmatoxylin method.*

Method No. 2.—Dr. Upson has devised another method, the details of which, I believe, have not yet been published, and which I have not had an opportunity of trying. In this method he brings the sections, soon after cutting, into the one-per-cent. solution of gold chloride for half an hour; they are then washed superficially in water, and then placed for from a half to one minute into a fifteen-per-cent. solution of sodium hydrate, to which has been added, just before using, a trace of chromic acid; they are again washed, and then placed into the reducing fluid, made as follows:

Tin solution,	-	-	-	-	-	-	-	gtt. xv.
Distilled water,	-	-	-	-	-	-	-	c. c. iiij.
Iron solution,	-	-	-	-	-	-	-	gtt. iiij.
Sulphurous acid,	-	-	-	-	-	-	-	c. c. iiij.

The tin solution is made by adding 1 to 2 grms. of protochloride of tin to 30 c. c. of a one-per-cent. tincture of iodine.

The iron solution is made by making a five-per-cent. solution of the phosphate of iron—using the soluble scale salt.

This reducing fluid should be made fresh immediately before using, and the ingredients added in the order named.⁵

After all has been said, I believe that the hæmatoxylin method of Weigert is the most reliable of the methods mentioned, inasmuch as it is, with a moderate amount of care in hardening and the selection of carefully prepared solutions, uniformly certain in its results.

AN INTERESTING CASE OF PYELONEPHRITIS FOLLOWING DISPLACEMENT OF THE RIGHT KIDNEY.

BY LOUIS F. CRIADO, M.D.

Read at the Annual Meeting of the Brooklyn Pathological Society, Jan., 16, 1890.

Under normal conditions the kidneys are held in their natural position by an abundance of adipose tissue, over which the peritonæum is reflected. Oftentimes one or both of these organs are found to have deviated from their natural position and to have become fixed, or to possess such a degree of freedom as to permit considerable mobility and change in its position. Many of these cases become mere patho-

⁵ Since the reading of this paper I have done some work with this method, and find it much more reliable than the Method No. 1. I find that in the use of the first method one is more apt to get the purple oxide in the tissue, while in the use of the second method the red oxide is almost uniformly produced.

logical curiosities from the fact of their being subject to little or no inconvenience or disturbance; in others, however, the amount of suffering is quite severe and even compromises life. The most frequent seat of malposition of a displaced kidney is the umbilical region; in fact, a tumor found in this region should always arouse suspicion. Likewise, a kidney may be found in the inguinal or hypogastric region, and even within the pelvic cavity. These malpositions are oftener met with amongst females than in the opposite sex, and the organ on the right side appears to be the one most frequently displaced. Oppolzer, Rollet, Ebstein, Hare, Roberts, Landau, Hahn, Newman, Becquet, and many others have reported and collected a large number of cases. Of 96 cases collected by Ebstein, 82 occurred in females and 14 in males. In 91 of these cases there were 65 in which the right kidney, 14 in which the left kidney, and 12 in which both organs were found displaced. Roberts reports 70 cases collected, 61 of which were females and 9 males. In 65 of these cases there were 42 in which the right, 9 in which the left, and 14 in which both kidneys were found displaced.

As a rule, considerable inconvenience and suffering follows a non-congenital displacement of the kidney. There is generally an expression of anxiety, depression of spirits, a feeling of dragging, as if there was something wrong in one side of the abdomen, and much aggravated by standing, walking or riding; dyspepsia, nausea, vomiting, neuralgic pains, and pains varying in intensity, radiating towards the loins, around the waist, extending to the shoulders and down the thighs; fainting, and even collapse. In the majority of cases the patient discovers the tumor, which when the physician's attention is called is recognized by its shape, size, elasticity, smoothness, and on account of its being more or less movable; and, when pressed upon, by the peculiar pain caused, which can similarly be produced by pressing upon the lumbar region corresponding to the other organ. It is said that the lumbar region corresponding to a displaced kidney appears flattened and sunken in, and that whenever the organ is replaced it becomes as prominent as the other side. I am inclined to regard this observation as of more theoretical value than clinical. There is a liability to the development of peritonitis and a considerable amount of inflammatory exudation, the kidney thus becoming fixed. The tendency is usually towards recovery; but it frequently occurs that as a consequence of an injudicious jump, a fall, a blow upon the displaced organ, a prolonged walk, fatiguing exercise, *per se*, the kidney twisting upon its own axis, or for some unknown reason an inflammation ensues, producing an obstruction of the ureter, and subsequently a pyelitis or a perinephritic abscess; the tumor thus becoming

enlarged and encroaching upon the inferior vena cava, is apt to cause an interference in the circulation, as reported by Ryer, in which case it obliterated that vessel.

It is both possible and probable that the displacement of one or both of these organs occurs much more frequently than is generally believed or admitted, inasmuch as the diagnosis is oftentimes not only difficult and uncertain, but because the fact of such a possibility is frequently overlooked; and, again, because the subjective symptoms vary greatly. The fact of a kidney being displaced does not invariably give rise to symptoms; indeed, post-mortem examinations have proven the existence of a displaced kidney which had not been suspected during life. With this very object in view, Walther examined a number of persons, and detected the above abnormality in many cases in which there were no symptoms whatever. Rollet states, that of 5,000 persons examined by Oppolzer, displacement of the kidney was discovered in the proportion of one in every 250. This organ has been found lying between the bladder and rectum, besides the uterus, and thus mistaken for a diseased ovary. Ebstein mentions a case in his practice which was mistaken for a mesenteric hydatid cyst. Rayer cites a case in which on two occasions this organ was found displaced and lying on one side of the psoas muscle during labor. Edes mentions another, which led to an attempted removal of a supposed ovarian cyst, and which proved to be a displaced kidney. Trauseau mentions a case which was mistaken for peritonitis, and another in which an abdominal tumor was supposed to be of malignant nature, and proved to be a displaced kidney. A case has been reported in which a woman with an enlarged displaced kidney was for some time believed to be pregnant.

The history of the present case is as follows :

Marshall A., aged two years and ten months, on attempting to descend a flight of stairs, lost his balance and fell head first the entire flight, turning two or three somersaults and striking forcibly against a wall. He was taken up from the floor almost senseless, and household remedies resorted to until the next day, when, on account of nausea and his being very irritable and feverish, a physician was summoned, and the belief entertained that "perhaps it might prove to be the measles." On the following day the child's relatives noticed that he complained of pain whenever they touched his abdomen; the attending physician, however, concluded that the child was suffering from an attack of pneumonia (not the measles), continued attending him five or six days, and it then became evident that the child did not only complain of pain in the abdomen, but that there actually was a hard tumor that could be felt. On the eighth day, the family consulted

another physician, who examined the patient, and believed that there was some intestinal difficulty. On or about the eighteenth day the physician who first attended to the child was again summoned, and his attention called more especially than ever before to the tumor; he examined the child and concluded that the tumor was due to an abscess of the liver, making it known at the same time the advisability of an operation. The family objected, and, becoming much alarmed, brought the patient to my office for advice. I learned that he had, of course, been taking medicines, and had been ordered a strict diet in the supposition of the foregoing diagnosis. The child was very fretful, unable to stand, much emaciated, feverish, and urinated frequently. On physical examination, I discovered an elastic, smooth tumor, of about the size of a lemon, lying obliquely, a little to the right of the umbilical region. I informed the relatives that my belief was, that the child had suffered a displacement of the right kidney; that the tumor would not disappear, inasmuch as the organ could not be replaced (it had become fixed), but that I thought he would improve in health, regain his strength, and be as well as usual. I advised them to allow the child his usual food *ad libitum*, ordered elixir of calisaya, and anointing the abdomen with warm camphorated oil, cautioning them at the same time that, should the child improve, not to permit him to run, jump, or indulge in any active exercise as children are apt to do. I saw the patient three times within three weeks. He had markedly improved in health generally, his appetite was excellent, he was playful, slept well, and appeared as well as he had ever been before. The last time I saw him the supposed kidney could be felt in the same region; in other words, the tumor had not disappeared, increased nor diminished in size, but it was no longer painful; in fact, the family had become quite forgetful of the child's previous condition, and did not believe him otherwise than in his usual good health, until about four and a half months after the accident, when he contracted bronchitis on the day following a bath, and shortly afterwards suffered a severe blow on his abdomen, by having accidentally been thrown out of his baby-carriage and fallen against a curbstone. From the time I last saw him after the first fall to the time he contracted bronchitis and sustained another injury by falling, a period of two and a half months, the child had enjoyed his usual good health and never complained. About a month after the second accident the patient was again brought to my office, the family having previously consulted a large number of physicians and many more afterwards. I ascertained that he had had considerable pyrexia ever since the day following the second fall; that he had lost his appetite, cared not to play, complained of pain at the seat of the tumor, perspired very freely, had an intense thirst, and wanted day and night to be rocked on the mother's lap.

On examination, I discovered that the abdomen was tense and larger than I had seen it five months and a half before; the tumor had increased in size, it was painful, and the abdominal veins were prominent, a fact which I attributed to an interference in the circulation due to mechanical pressure exerted by the tumor upon the visceral organs, and probably more so upon the vena cava. The child was at the time frequently passing large quantities of urine very highly colored; the tongue was coated and there was some pyrexia of a hectic type. My diagnosis was displacement of the right kidney and probably pyelitis, an abscess, or the formation of a phlegmon about the said organ due to the direct injury inflicted by his having fallen the second time. The child continued suffering, became very much emaciated, vomited, had œdema of the feet and legs, slight convulsions, and finally died, seven and a half months after the first accident and three months after the second; having enjoyed between these two periods excellent health for two and a half months.

I am somewhat gratified at having the opportunity of presenting to you to-night the abdominal tumor, which proves to be a pyelonephritis of the right kidney, and regret much at the same time my inability to impart to you the result of the post-mortem examination, inasmuch as I have not been favored with the desired report, as might have been expected under ordinary circumstances, notwithstanding my most sincere efforts. Without wishing to become poetical, I trust that you will permit me to quote the following lines:

“He either fears his fate too much,
Or his desserts are small,
Who dare not put it to the touch
And win, or lose it all!”

I am therefore forced to accept the information volunteered to me by the child's grandmother, who naturally is an intelligent person, of clear perceptions, and reliable as to her statements. She informs me as follows:

“I witnessed the post-mortem examination on account of it being my personal desire to ascertain what really was the disease the child had; I did not wish to be told, I wanted to see. When the abdominal cavity was opened, I saw a large tumor, the one you now possess, bulge out; and I then suggested that I wanted to see the kidneys. The doctor was very kind, and showed me the left kidney, then the spleen. I then asked to see the other kidney. The operator passed one of his hands under the tumor that I had seen when the abdominal cavity was opened, and, after some delay, plainly remarked: ‘The right kidney is not here.’ I then asked, Where is it? Is it that tumor?

I was told, 'Yes, this must be the kidney!' The tumor was then removed, and cut into on one side; but I really did not see anything suggestive to my mind that looked like a kidney. I have seen many animals butchered; and from what I can remember all the other organs appeared healthy."

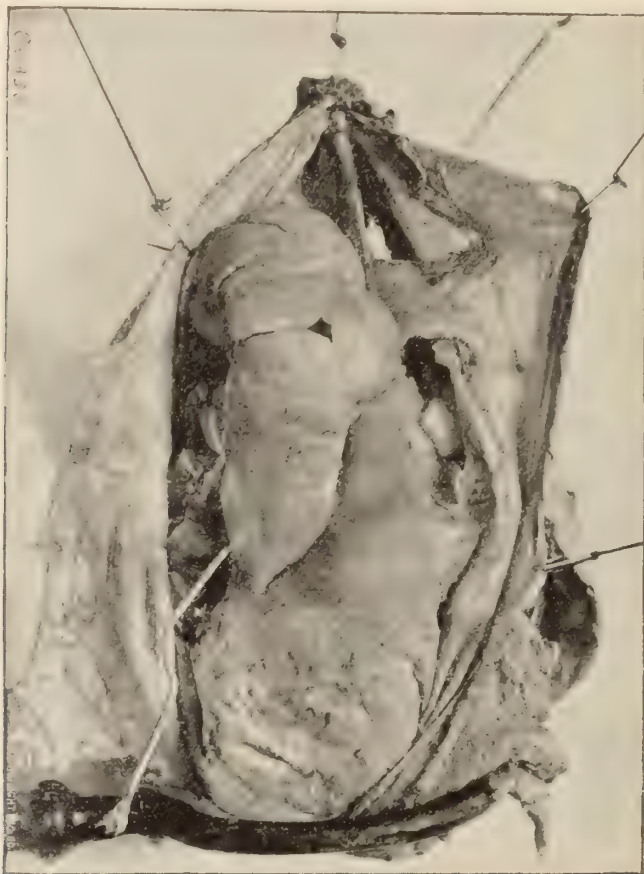


Incision found made into the pelvis of the kidney, showing nothing beyond a mass of coagulated fibrin.

The tumor weighed, when I became the possessor of it, two pounds and eight ounces, and was as large as a child's head. On one side of it there was a fluctuating prominence; on the other, it was discovered

that an incision had been made at the post-mortem examination, with the object, probably, of ascertaining its nature.

On examination, I found that the cavity thus made was filled with large masses of what I supposed to be coagulated fibrin. In my judgment, quite a large amount of blood and pus must have been found



Incision made into the fluctuating prominence, showing the kidney previously conjectured.

when the tumor was incised. Externally, the tumor presented a thick fibrous membrane or capsule, and the surface thereof remnants of a pre-existing amount of inflammatory adhesions. There was no evidence at all, however, as it will be apparent to you on examination of the tumor, of it being or having been a kidney, such an assumption could only have been the result of a hasty examination, or the earnest

necessity or desire to account for the organ sought after. An incision similar to that found was made into the fluctuating prominence previously referred to, from which about two or three ounces of pus and blood escaped, and within the kidney, previously conjectured but not demonstrated, was discovered. It then became evident that the incision previously noticed had been made lengthwise and into the pelvis of said organ, revealing, as it does, nothing beyond a mass of



× About 500.

coagulated fibrin and inflammatory products, evidently due to a hæmorrhage immediately following the last injury. The microscopical examination reveals a general parenchymatous nephritis. The epithelium is found generally detached from the uriniferous tubules, and to have undergone a granular and fatty degeneration. Within the tubules, epithelial casts are quite abundant. The capillary blood-vessels are distended and filled with blood corpuscles, due to a congestion and probably to an interference in the return of the circulation. Between the tubules there is to be seen an abundant increase of connective-tissue and some astray leucocytes infiltrating the parenchyma generally. Examination of the supposed masses of fibrin found within the cavity corresponding to the pelvis of the organ, into which an exploratory incision had been made at the post-mortem examination, verifies the previous belief of it being composed of coagulated fibrin, holding in its meshes blood corpuscles and leucocytes. There was nothing found

indicative of tuberculosis or of a malignant nature. The spleen weighed twelve ounces; it was firm, and its capsule had undergone a fibroid thickening. The cut surface is smooth, sharp, shining, and presents a fleshy appearance, marked with whitish stræ, due to thickening of the trabeculæ. The only change observed, microscopically, is an overgrowth of such tissue-elements as normally exists; the stroma, however, is well defined fibrous. The sinuses are distended and contain loose endothelial cells, blood corpuscles, and leucocytes; the latter are especially noticeable in the neighborhood of blood-vessels. The pathological conditions herein observed are probably due to a chronic venous congestion.



REPORT OF CASES OF CARCINOMA OF THE BREAST,
OBSTRUCTION OF THE BOWELS, TIGHT STRICTURE
OF THE DEEP URETHRA AND STONE IN THE
BLADDER OPERATED UPON DURING THE
YEAR 1889.

BY LEWIS S. PILCHER, M.D.

Read before the Brooklyn Surgical Society, February 20, 1890.

CARCINOMA OF THE BREAST.

Five cases of carcinoma *mammæ et axillæ* have been subjected to operation during the year 1889. In all the disease had been allowed to run on unchecked until the amount of gross infiltration of the breast and of the axilla had become quite extensive. One patient, forty-three years of age, had become aware of a hard nodule in the right breast fourteen months previously. Little attention was paid to this tumor, until at the end of a year some œdema of the inner side of the arm awakened alarm, and I saw her for the first time. Extirpation of the mammary growth, together with complete cleaning out of the axilla, was done at once. A fine line of induration was traced up beneath the clavicle, and a second incision along the under edge of the clavicle was made, giving access to the space between the deltoid and clavicular portions of the *pectoralis major*. At this point, from under the clavicle, a minute indurated gland, the size of a linseed, was extirpated. Six weeks later, attention was called to an indurated nodule, which could be felt deep in the neck behind the clavicle, beneath the outer border of the clavicular insertion of the *sterno-cleido-mastoid*. An immediate attempt to remove this was then made. The parts were exposed

by an incision along the lower half of the outer border of the sterno-cleido mastoid muscle to the clavicle, and thence outward for two inches. The flap of the superficial tissues thus made when retracted gave good access to the deeper parts, which was made more ample ultimately by prolonging the incision further inward toward the sternum and dividing the clavicular insertion of the sterno-cleido. A careful dissection enabled me to isolate the internal jugular and the subclavian veins, and to expose their junction, at which point the carcinomatous deposit was found to be located. It involved the sheath of both vessels, but seemed to encroach the most upon the subclavian vein. As it was plainly impossible to separate it from these veins, I determined to try and remove a section of the veins with the growth. My plan of attack, as formed on the instant, was to first double ligate the internal jugular, and divide it; then, lifting forward the lower part attached to the growth, get behind the growth and work my way down beyond it, if possible, and then place a ligature around the innominate vein. Having done this, I could ligate the subclavian vein on the distal side of the growth, and finally get away the whole diseased mass. Such a procedure is as yet without a precedent in operative surgery, as far as I know, but it is not technically impossible under certain conditions. I had already demonstrated in 1885, in the well-known case in which I had tied both the subclavian and internal jugular veins, that serious danger to the upper extremity from the venous engorgement resulting from such an act could be prevented by simultaneous ligation of the axillary artery, and I proposed to myself to ligate the subclavian artery in this present case, after the veins had been tied.

In accordance with this plan, I doubly ligated the internal jugular, and cut between. Lifting the lower part of the vein forward and insinuating the tip of the finger behind it and downward, it now became evident that what up to this time had seemed a comparatively small, though inconveniently-placed nodule, was simply the outcropping of a mass of considerable size that extended downward into the mediastinum. It infiltrated the adjacent portion of the scalenus anticus muscle, and involved the phrenic nerve. I had to reluctantly own that its removal was impossible. I therefore desisted from further interference; adjusted and sutured the flap in place, bringing out a tampon of iodoform gauze at one end of the incision for purposes of drainage. The further course of the wound was uneventful. Right hemicrania for the first week was the result of the ligation of the jugular vein.

In another case, the growth being a recurrent one after removal of the breast and some of the axillary glands by another surgeon about a

year and a half before, the axilla had become the seat of a recurrent growth, which not only affected the tissues of the axilla, but also had involved the pectoral muscles. Free ablation of all the affected tissues was done, which involved a very minute dissection of the axillary vessels and nerves. The axillary vein was inextricably involved in the disease, and had already become thrombosed. An inch or more of its length was excised. Some œdema of the forearm and the inner side of the arm still remains in this case, but the functional power of the arm and hand as a whole is surprisingly good. The future course of the case is to be regarded with interest in view of the recent views propounded by Heidenhain (*German Surgical Congress*, 1889; *Annals of Surgery*, Nov., 1889), as to the malignancy of muscle cancer. That observer found extensive dissemination of microscopical cancer-nodules in the lymphatics of otherwise healthy muscular tissue. The cause of this he suggests may be the influence of muscular motions and contractions to produce or favor wide scattering of any epithelial cells in the lymph current of the muscular lymphatics. A practical fact in support of the malignancy of muscle cancer he gives in the statistical item that of sixty-five cases of such patients, the records of which were accessible to him, only two were permanently cured. He therefore looks upon a muscle which has become visibly infected by carcinoma in any part as suspicious in toto, and logically recommends that typical total ablation of all such muscles be done, not a fibre being left. In the not infrequent instances in which the pectoralis major muscle is affected, the whole organ, with its clavicular and sternal attachments, should be taken away.

In one of the other cases of this year the primary growth had also become attached to the pectoral muscle. I excised freely and widely the portion of muscle involved, but did not make the extensive excision advised by Heidenhain. These two cases now mentioned, strangely enough, were operated upon by me the same day. At the end of five months they both returned with recurrent growths in nearly identical locations, namely, in the lower anterior portion of the fibres of the great pectoral muscle, a portion which seemed entirely free from infection at the time of the operation. Had a systematic dissection away of the pectoral from its origin been done as a part of the original operation in these cases, such recurrence would have been prevented.

Recovery from the second operation in both these cases was prompt. In the first one, however, within a few weeks the development of yet another carcinomatous nodule had become apparent, and this time in one of the sternal slips of origin of the pectoralis major muscle. Examination of the neck also revealed a nodule present deep behind the clavicle. Extirpation of these deposits has been made. The patient is now convalescing from this last operation.

These researches of Heidenhain into the causes of local relapse of cancer after amputation of the breast seem to me to be of the greatest importance, and particularly his demonstration that in two-thirds of all cases of mammary cancer numerous cancerous deposits are to be found in the lymphatics which pass through the layers of retromammary adipose tissue to the pectoral fascia beneath, so that though the visible tumor may be freely movable over this fascia, nevertheless cancerous elements may be already freely present in the fascia in the lymphatics. These lymphatics accompany the blood-vessels which penetrate the muscle and thus become the channels of its infection. Security from recurrence cannot, therefore, be obtained even in those cases in which the mammary growth is still apparently limited to the gland, except by taking away with it both the underlying pectoral fascia and a fairly thick layer of the muscular substance itself. The practical lesson, corroborated by all the experience of the past in the almost certain recurrence after extirpations, is that no operation for the removal of cancer of the breast can be considered radical and trustworthy which does not combine free ablation of the breast and its overlying integument, with entire cleaning out of the glands and connective-tissue of the axilla, and removal of the pectoral fascia and superficial layer of the portion of the pectoral muscle lying underneath the gland. I am ready to accept also, as a working hypothesis for the present, the suggestion as to the complete extirpation of the whole pectoral muscle when any part of it has become involved. Operations for the cure of mammary cancer as they have become more extensive and radical have become more successful in their ultimate results. Butlin, in his *Operative Surgery of Malignant Diseases*, claims from twelve to fifteen per cent. of permanent cures out of a large number of cases, in some of which only partial operations had been done. It remains for the future to accumulate an experience that will be of value in determining the real weight which is to be attached to the observations of Heidenhain.

OBSTRUCTION OF THE BOWELS.

The following two cases of intestinal obstruction which were submitted to laparotomy illustrate well the difficulties which gather about cases of this kind when they appeal for surgical relief. It is only by the intractable nature of the obstruction, the persistence of the vomiting and the threatening collapse which is developing that in most cases it is finally demonstrated both to the attending physician and the friends that something more than a transient gastric or intestinal disturbance is present. When an operation is finally resorted to, all the odds are immensely against a successful termination as regards the saving of life.

The first case is that of a man, thirty-seven years of age, who was admitted to the Methodist Episcopal Hospital with a rigid, tender and tympanitic abdomen; pulse, 140; temperature, 100.4° F. He was vomiting frequently a greenish fluid, without feculent odor. His attending physician stated positively that on the preceding day he had vomited feculent matter. Ten days previously he had had his last normal stool; four days before admission he had had a slight movement of the bowels, described as black and tarry in character. Seven days before admission he had a transitory attack of severe colicky pain in the abdomen; previous to this time he had supposed himself well, as he always had been. This attack did not prevent him from working as usual for the next three days, after which time the colic returned, accompanied with vomiting, and these symptoms persisted until his admission into the hospital. Cathartics, opiates and enemata had been used vigorously before his admission. After his admission another enema was administered, without result. The stomach was then washed out, after which laparotomy was proceeded with. Exposure of the intestines revealed a general peritonitis already present, with great distension of the small intestine throughout its whole extent. The incision was lengthened sufficiently to permit of the ready turning out of the small intestine; the large intestine, quite empty, was then traced backward, beginning on the left side; at the hepatic flexure it was found to be imbedded in a mass of old organized inflammatory material, which bound it to the posterior wall of the cavity. This formed a band an inch or more in breadth, gluing all the adjacent structures together: on the proximal side of the band there was the livid, softened, distended, ascending colon. It was evident that any attempt at breaking up the inflammatory adhesions would be attended with great risk of rupture of the intestine, a risk that was increased by the depth of the involved parts from the surface. The obstruction would be overcome by forming an anastomosis between the lower portion of the ileum and the transverse colon a few inches beyond the point of obstruction. This was accomplished by the use of Abbe's catgut rings. Great difficulty was experienced in returning the distended small intestines, and a puncture was necessary to empty them. This being closed, they were returned into the abdominal cavity. The patient never rallied from the shock, but died within an hour after his return to bed. The autopsy showed a chronic ulcer of the ascending colon, which had not perforated the peritonæum, but had nevertheless occasioned the local peritoneal exudation that had caused the obstruction. It was found that, so far as the anastomosis was concerned, everything had been accomplished that had been attempted at the operative procedure.

It has been suggested that in this case a more favorable result might have been obtained by making a limited incision at first and drawing out the first loop of distended intestine that presented, and, after properly stitching it in the wound, puncturing it, thus forming an artificial anus. This would have relieved the obstruction to the exit of *fæces*, with very much less shock to the patient; and had the exact nature and location of the obstruction been known before beginning the operation would have been the proper course to pursue. But I submit, as a general proposition, that in all cases of acute obstruction of the bowels, in which laparotomy is resorted to, it is the first duty of the surgeon to discover the nature of the obstruction, provided any uncertainty exists about it. The difficulties which attend such a search are notorious. A cause of obstruction tucked away up under the liver, within a rigid walled abdomen, filled with inflamed and distended coils of intestines, can be successfully searched for only in the way that was adopted in this case. Whether it would have been better, after the obstruction had been discovered, to have made a second opening in the loin, brought the ascending colon into it and then established an artificial anus instead of making the anastomosis, may be a matter for fair difference of opinion. It would have taken full as much time for its performance, and would have left the patient in a much less desirable condition had recovery occurred.

The second case of obstruction was operated upon during the night of December 31st. An active boy, nine years of age, had come in from his play four days before, complaining of pain in his abdomen, with vomiting. His bowels had moved shortly before the coming on of the attack. The symptoms were not severe, and indicated nothing more than passing indigestion, but they did not yield to the usual carminative and cathartic remedies. The vomiting was persistent. The abdomen became more and more tympanitic, being somewhat tender upon pressure but without pain. Stronger cathartics and repeated enemata were ineffectual. No elevation of temperature.

When I first saw the child, at the beginning of the fifth day, he was vomiting at short intervals greenish fluid, not feculent. His abdomen was greatly and evenly distended, and through its thin walls the workings of certain coils of intestines could be seen. His breathing was somewhat embarrassed by the abdominal distention. The indications for immediate operative interference were clear, with a provisional diagnosis of *volvulus*. In view of the absence of feculent vomiting, and the apparent fair condition of the child at a period so long after the inception of the attack, it seemed probable that the twist could be found at the sigmoid flexure of the colon. This was rendered more probable by what seemed to be the outline of the dis-

tended transverse colon, which was clearly defined by sight and percussion across the upper part of the epigastrium. I proposed, therefore, to do a temporary inguinal colotomy first for the immediate relief of the symptoms, deferring formal laparotomy until a more favorable time. Accordingly, a small incision was made in the left inguinal region sufficient to admit of the introduction of two fingers for exploration. The distended small intestine alone could be brought into view, and the finger introduced could feel the empty colon in its proper place. It was thus evident that the seat of the twist was not at the sigmoid flexure. The inguinal incision was at once closed, and then the usual incision in the median line was made. Darkly congested and distended coils of small intestine were immediately brought into view by this incision, and by following in the direction of increasing lividity, passing the intestine, coil by coil, through the fingers, without turning out any considerable mass of it from the abdominal cavity, the seat of trouble was soon reached. It was near the lower end of the ileum. Here a volvulus had formed by a complete twist of a limited portion of the mesentery upon itself. By slightly enlarging the abdominal incision, sufficient room was gained to bring out and manipulate the involved loops and to untwist their mesentery; there were no adhesions. A small longitudinal incision was now made into the most prominent coil of the greatly distended small intestine, along that portion of its periphery opposite the mesenteric attachment, for the purpose of giving vent to the fæces and gas that had hitherto been dammed up, and to facilitate their return to the abdominal cavity. About three pints of liquid fæces escaped, the flow being facilitated by lifting up adjacent loops so as to pour along their contents. After proper cleansing, this opening was closed by a few points of Lembert's suture. The mesentery having been replaced, the abdominal wound was sutured. The shock of the operation was extreme; though temporary rallying was accomplished by the usual means, the boy soon began to sink again, and finally died, five hours after the close of the operation.

The experience of this case confirms me in the belief that in all cases of acute intestinal obstruction the operative method that will most conduce to speedy relief of the obstruction and give the greatest promise of saving life is a primary incision in the median line of the abdomen ample enough to permit both by touch and inspection a rapid examination of the intestinal tract. It was the great abdominal distension in the case of this child that influenced me to attempt first a less serious operation than a formal laparotomy, for I realized the difficulties that would attend the successful management of the protruding mass of intestines that would crowd up into an abdominal

incision of any size. There seemed to be sufficient in the character of the symptoms of the case to warrant the hope of advantage from this course, but, as the result proved, it was a waste of time at least, prolonging as it did considerably the length of time during which the anæsthesia was maintained.

One naturally hesitates to incise the abdominal wall to any extent when there is already present great distension of the bowels, in consequence of the inevitable extrusion of the bowels and the difficulty of replacing them. But it is true that in many cases only by such extrusion can a satisfactory and speedy knowledge of the location and cause of the obstruction be gained, and for that reason it may well deliberately be produced without hesitation early in the course of the examination. If we may accept the contention of Greig Smith (*Abdominal Surgery*, p. 377), that excessive distension requires relief almost as urgently as actual strangulation, it will be logical for the surgeon to direct his first effort to relieving this distension when it exists by permitting sufficient of the distended bowels to protrude at once, and by incision to be emptied before proceeding in the search for the obstruction. The discovery and relief of the latter will certainly be facilitated if this is done. Smith goes even so far as to say that "no operation for intestinal obstruction is properly completed if the patient leaves the operating-table with a greatly distended abdomen;" and sums up by saying, "I would, therefore, in every case of laparotomy for intestinal obstruction with distension, consider evacuation of the intestinal contents as an essential part of the proceeding." Senn, likewise (*Surgical Treatment of Volvulus*, *Med. News*, Nov. 30, 1889) adds his authority to this practice, saying that he "believes it is absolutely necessary to incise the bowel in every instance where the abdomen is opened for the purpose of reducing a volvulus." The similar practice of Madelung and Hahn may also be referred to. It is evident that in the desperate class of cases under consideration only prompt, rapid and heroic action along a well-settled line of procedure can be expected to avert the threatening death. An ample primary incision in the median line; no wasting of time in trying to prevent the escape from the abdominal cavity of distended coils of intestine; in some cases the deliberate turning out of these coils and emptying them of their contents by incision; the prompt and systematic exploration of the abdominal cavity by the finger or hand, assisted when needed by the eye; the quick decision as to the practicability of relieving the cause of obstruction, and the unhesitating adoption of artificial anus, anastomosis or excision, as the special conditions of the case may indicate,—these I believe to be the cardinal points of all operations for the relief of intestinal obstruction. It is hardly necessary to say that the earlier the

diagnosis can be established and the operative effort made, the less the operative difficulties will be and the greater the probabilities of preserving life.

TIGHT STRICTURE OF THE DEEP URETHRA.

In three instances during the past year I have resorted to external perineal urethrotomy for the relief of tight stricture of the deep urethra. In two of the three cases giving way of the urethra behind stricture had already taken place, with urinary extravasation and perineal abscess, which occurrence determined their application for relief. In the third case a very close stricture, $5\frac{1}{2}$ inches from the meatus, existed, through which I was unable to coax even a filiform bougie; and the difficulty in urination and the vesical irritability resulting from the obstruction were the cause of constant suffering.

Upon general surgical principles I am inclined to look with favor upon perineal section for the relief of strictures of the deep urethra, when they are not satisfactorily controlled by ordinary dilatation, even in those cases where their calibre is large enough to permit resort to internal urethrotomy. The free external incision, the exact and thorough division of the stricture under the eye of the operator, the ready control of hæmorrhage, the adequate drainage which the perineal incision supplies, seem to me to be conditions which the surgeon can not estimate too highly in selecting a method of cure in deep-lying urethral stricture. If this is supplemented by free internal urethrotomy for strictures in the penile portion of the urethra, so that in any given case a restoration of the full calibre of the tube throughout its whole extent is obtained, the subsequent speedy closure of the perineal wound is almost certain, and with proper after-care in the occasional introduction of a sound, future recontraction can be guarded against.

In the three cases now reported, as indeed has generally happened in the cases in which I have had to do perineal section, so greatly was the urethra contracted and deformed by the cicatricial mass in which it was embedded, that I have not been able, even after opening the urethra and having the face of the stricture in full view, to insert a director or other guide through the stricture for the guidance of the knife, but have been compelled to carefully dissect through the cicatricial tissue in the direction of the urethra until the dilated end of the urethra beyond was reached and opened into and the connection re-established. With proper assistance and a good light, and the patient in an exaggerated lithotomy position, with pelvis somewhat raised, this is not usually attended with any great difficulty.

The results obtained in the three cases under consideration were very satisfactory, and justify the favorable estimate of external section first given. This has been my uniform experience with this operation up to the present time.

STONE IN THE BLADDER.

Five cases of stone in the bladder have been operated upon. In three of them litholapaxy was employed, and in two the median perineal incision was resorted to. A calculus impacted in the prostatic urethra was present in both of these latter cases, and this fact determined the choice of operation. The median incision enabled me readily to remove the impacted calculus in each case, and afterwards to clear out the bladder. In one case two additional calculi, each as large as a hickory nut, and in the other sixteen calculi, from the size of a large hazel nut to that of a small pea, were removed. Both recovered.

The three cases of stone crushing and evacuation were all eminently satisfactory. The stones were soft and of quite moderate size. The operations were not prolonged, and the convalescence in each was rapid and uncomplicated. In one case the eyed end of a soft catheter was known to have been broken off in the bladder a few days before the operation. This was happily sucked up through the evacuating tube during the operation, and was found among the debris of the stone at its close. In one of the other cases, a large evacuating tube having been first introduced for exploration, in its withdrawal a calculus the size of a large white bean was drawn out with it, its size and form having enabled it to be first engaged and held in the opening of the tube. The tube was then introduced again, and after a few washings back and forth, was withdrawn and brought with it a second calculus similar in size and shape to the first. No other calculi could be found in the bladder of this patient, and he was thus relieved without the lithotrite having been used at all.

NEW YORK STATE MEDICAL ASSOCIATION.

The next meeting of the Fifth District Branch of the New York State Medical Association will be the Sixth Annual Meeting to be held in Brooklyn on Tuesday, May 27, 1890.

All Fellows desiring to read papers will please notify the Secretary.

E. H. SQUIBB, M.D.

P. O. Box 94, BROOKLYN.

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EDITORIAL.

PHYSICAL EDUCATION AT THE UNIVERSITY OF PENNSYLVANIA.

This department is under the direction of Dr. A. H. P. Leuf, formerly of Brooklyn, and is evidently fast becoming one of the leading departments of the University. In *The University*, for October, Dr. Leuf gives a concise statement of the work done by the students and the general outline of the plan of physical education adopted by him.

Physical education at the University of Pennsylvania is of two kinds, being, first, that which has in view the equalization of the physique and its elevation to a fair average or standard, and, second, competitive athletics. Legislatively a line is drawn between the two, though both naturally merge together. Work is done in a well-equipped though rather small gymnasium and upon an athletic field. An athletic association of alumni controls the athletic grounds, being responsible for its maintenance in good condition all the year round. The gymnasium is also under its supervision, though the Trustees of the University supply the financial support. There is a regular department of physical education headed by a director, who is an *ex-officio* member of the college faculty. It is his duty to lecture regularly to the freshman and sophomore classes on physical education during the college year. A compulsory physical examination by him of these two classes is held three times during the year, *i. e.*, at the beginning and end of the first and at the end of the second terms. These consist of the height, weight, girth, the lung capacity, and certain

strength tests. From these are calculated the development, strength, and condition of each individual, all of which are entered in a special book kept for that purpose, together with a brief family history of each person examined. His full record is then given each student in a small pamphlet containing elementary directions about special exercise, diet, clothing, sleep, etc. A printed four-page circular of instruction, containing directions for certain home exercises in detail and a list of gymnasium apparatus is also furnished him, with a pencil check-mark opposite the name of each apparatus upon which he is to take his prescribed work.

The college-roster provides for compulsory gymnasium-work twice a week under the care of a competent gymnast, who sees that the prescribed exercises are faithfully carried out. Whenever an examination discovers a man fit to go into special training, he is advised by the director as to the kind of special work to which he is naturally adapted, provided it agrees, or at least does not conflict, with his family history. The parents of every student examined receive a printed form giving his development, strength, condition, and lung capacity, with the averages for the same age, together with a statement of the parts requiring special development, and the exercises recommended.

Arrangements are made for training the student in rowing, cricket, foot-ball, base-ball, and tennis.

In discussing the question why the University does not stand better in athletics, Dr. Leuf says that there is very little university spirit, and no regular provision made for instructing men just entering college how they may avail themselves of the advantages which they are entitled to in the way of physical education. There is also no plan for winter practice or training. The recommendations made by the doctor to remedy these defects are plain and practical, and should they be adopted would certainly much improve the reputation of the University, and at the same time prove of inestimable value to the students.

QUARANTINE AGAINST LEPERS.

The United States Treasury Department has issued the following instructions :

“Until further orders no vessel shall be admitted to entry by any officer of the customs until the master, owner, or authorized agent of the vessel shall produce a certificate from the Health Officer or Quarantine Officer at the port of entry, or nearest United States Quarantine Officer, that no person affected with leprosy was on board the said vessel when admitted to free pratique, or in case a leper was found on board such vessel, that he or she, with his baggage, has been removed from the vessel and detained at the quarantine station.”

PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular meeting of the Medical Society of the County of Kings was held at the Society's rooms, 356 Bridge Street, on Tuesday, February 18, at eight o'clock P. M.

There were about 75 members present. The President, Dr. Walter B. Chase, in the chair.

The minutes of the previous meeting were read and approved.

The Council reported favorably on the name of Dr. Eugene J. Kenney, and recommended that he be elected to membership.

The following propositions for membership were made:

William H. Dudley, 310 Henry Street, L. I. C. H., 1886; proposed by Dr. J. A. McCorkle; Dr. J. M. Van Cott, Jr.

John F. Kent, 141 Lewis Avenue, Bellevue, 1888; proposed by Dr. Jas. C. Kennedy; W. M. Hutchinson.

A. F. Zahn, 52 $\frac{1}{2}$ Sumner Avenue, Bellevue, 1887; proposed by Jas. C. Kennedy; W. M. Hutchinson.

Paul Heiser, 1344 DeKalb Avenue, 1872; proposed by Dr. Jos. H. Raymond; Dr. Wm. M. Hutchinson.

Dr. Z. F. Dunning, Cleveland Street, corner Arlington Avenue, Albany Med. College, 1888; proposed by Geo. E. Law; Sidney Allen Fox.

Dr. Peter Scott, 128 Reid Avenue, Univ. of Glasgow, Scotland, 1886; proposed by Louis E. Meeker; Jos. H. Hunt.

SCIENTIFIC BUSINESS.

The first paper of the evening, entitled "Photography in Its Uses in Medicine," was read by Dr. Henry Beekman Delatour, and discussed by Drs. Dickinson, Jewett and Mosher.

The next scientific business being the discussion of "La Grippe," "Or Epidemic Influenza," the discussion was opened by Dr. Shepard, and continued by Drs. Chase, Briggs, Topham, Eccles, Mosher, Maddren, Burge.

There being no further business, the meeting adjourned.

At a regular meeting of the Council of the Medical Society of the County of Kings, held March 11, 1890, the following resolution was introduced by Dr. A. J. C. Skene and unanimously adopted.

Resolved, That it is the opinion of this Council that all medical diplomas from foreign countries that do not recognize or acknowledge the diplomas granted by American medical colleges, should not be endorsed by medical colleges in the State of New York.

At the same meeting it was voted "that in the future all papers read before this Society should become the property of the Society, and that such papers, together with all reported discussion upon them, should be published in the Society's journal, the *BROOKLYN MEDICAL JOURNAL*, provided the capacity of the journal would permit, unless the authors of such papers, or the persons taking part in such discussions, should first obtain the consent of the Society to publish them elsewhere."

W. M. HUTCHINSON,

Secretary.



BROOKLYN MEDICAL MICROSCOPICAL SOCIETY.

The thirty-first regular meeting was held at the Hoagland Laboratory on March 5, 1890, with the president, Dr. C. Heitzmann, in the chair. It was proposed to consolidate the offices of treasurer, recording and corresponding secretary, and after the election of Dr. E. H. Wilson as president, Dr. Albert Brinkman was elected to fill the three offices for the ensuing year. Dr. L. F. Criado was recommended by the committee on membership, and duly elected to active membership. The treasurer's report was then read, accepted, and duly placed on file.

Dr. Bates then took the chair while Dr. Heitzmann described the following "rare specimens" which he had placed under the microscopes:

1st. A case of plastic inflammation of the placenta, with atrophy of the cord, causing obliteration of the placental villi and death of the foetus.

2d. Endothelima of ovary. From the examination of numerous specimens, Dr. Heitzmann claimed that the corpus luteum has not its accredited significance as an evidence of pregnancy. The wall of the Graafian follicle after bursting gives rise to new tissue by inflammatory thickening, which may involve the whole ovary. This tissue is made up of cells like epithelia, which are pierced in all directions by blood-vessels, which thus distinguish the mass from cancer. These blood-vessels increase in size, and the tumor is transformed to an angioma, and finally to hæmatoma. Its development is always accompanied by oöphoritis and mental disturbances

3d. Osteo-sarcoma of thigh, involving the bone. The interest of this case lay in the fact that the bony epiphysis had become chiefly transformed into a neoplasm of the benign connective-tissue type, while the body of the tumor consisted of myxoma and myxo-sarcoma. Dr. H. claimed that this would account for the clinical symptoms, pain having developed only later in the disease, when the growth had extended beyond the bone and assumed the malignant type.

4th. Diagnosis of sarcoma from an examination of the urine. Dr. H. claimed that from the presence of a certain homogeneous, highly refractive, non-nucleated "globule," intermediate in size between a red blood globule and a pus corpuscle, he could with certainty diagnose sarcoma of the genito-urinary tract, and cited various illustrated cases. The most interesting was that of a patient in whom sarcoma of the kidney was suspected. In the urine, Dr. H. found, blood, pus, kidney epithelium and "sarcoma globules," and therefore confirmed the suspected diagnosis. An exploratory incision showed the kidney apparently normal. The patient afterward died, and the kidney was sent to Dr. H., after a superficial examination which showed only signs of inflammation. Microscopical examination showed, however, a small sarcoma, which H. claimed was developed from the epithelia in the pyramids. He emphasized the value of the "globule" in the diagnosis of sarcoma, and claimed that the affected kidney could be located by drawing urine from the ureters singly—after cystotomy in the male, or by catheterization through the urethra in the female.

These cases were discussed by Drs. Kemp, Eccles and Heitzmann.

RICHMOND LENNOX,
Rec. Sec'y.

KINGS COUNTY PHARMACEUTICAL SOCIETY.

At the Annual Meeting of this Society, held February 11, 1890, the following officers were elected: President, William M. Davis, re-elected; 1st Vice-President, John Gallagher; 2d Vice-President, Thos. D. Hughes. Secretary and Treasurer, F. N. Bliss, re-elected. Lorentz Cantor, Chairman of Board of Censors; Thomas D. M. McElhenie, F. A. Kattman, Henry Douglas, Censors; Chairman of Board of Trustees, L. D. Sheets, M.D.; Trustees, Dr. P. W. Ray, D. H. Starr, R. C. Werner, William Hunte.

Messrs. L. F. Stevens, D. L. Cameron and C. W. Brunner were elected to represent the Society in the Committee on Revision of the Pharmacopœia at Washington.

The President delivered his annual address, which was received with the thanks of the Society, and a committee appointed to consider its recommendations and report to the Society.

The Secretary's report showed a net increase of five members for the year.

The Treasurer's report showed the treasury in a healthy condition, the balance on hand in Trust Co. being \$1,650.

The committees will be announced at the March meeting.

After reports by Chairman of Board of Trustees, Committees on Legislation and Trade Matters, the Society adjourned.

F. N. BLISS,
Secretary.

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

SUBCUTANEOUS LYMPHORRHAGIA.

Neufeld (*Gazette lekarska*, 1889, No. 11-12; *Centralblatte f. Chirurgie*, 1890, No. 4). The author describes three cases of this condition following injury, and draws the following conclusions:

Subcutaneous lymphorrhagia arises from a force applied in the direction of a tangent. Some heavy object comes in contact with the body, the force being applied in a slanting direction. As pathognomonic signs are to be mentioned: 1st, the immediate occurrence of well-marked fluctuation, which persists, inasmuch as the contents of the swelling does not become solidified; 2d, the exploring trocar demonstrates the presence of a clear yellow fluid; 3d, pain and febrile action are generally absent. The prognosis is favorable. The treatment should be an expectant one; a pressure-bandage may favor resorption of the fluid. Immediate evacuation by incision should be avoided, as violent inflammatory conditions may easily supervene; should the swelling persist, however, this may be ventured upon, under the strictest antiseptic precautions.

LUPUS EXCISION AND SKIN TRANSPLANTATION.

Senger, Krefeld (*Berliner klin. Wochenschrift*, 1889, No. 33). S. recommends, in order to prevent the recurrence of the disease, com-

plete excision of the same, and in case the gap left cannot be closed by suturing, to at once practice skin transplantation by Thiersch's method upon the fresh wound. A case of lupus of the chin, cheek and upper lip, upon which he operated in this manner, is described. He suggests that the strips of skin be laid in place so as to slightly overlap each other, as roof-tiles or shingles are placed in position.

IMPLANTATION OF ANTISEPTIC DECALCIFIED BONE.

Senn (*Am. Journal Med. Sciences*, vol. xcvi, No. 3, 1889, p. 219). The technique of Senn's ingeniously-devised method for the healing of aseptic bone cavities by means of implantation of decalcified bone is as follows :

The best material for the purpose consists in the tibia of a recently killed ox. The pieces of bone are immersed in hydrochloric acid to deprive them of their mineral substance, and then cut in strips of a millimetre in thickness and placed in a two-per-cent. solution of mercuric chloride in alcohol. Shortly prior to their use they are dusted with a thin layer of iodoform. Absolute asepsis of the parts to be treated is essential to success. Therefore all the surrounding structures must be in a perfect condition, free from pus, splinters of bone, and such like, before the transplantation is undertaken. After complete disinfection, S. dusts the walls of the cavity with iodoform. In operations upon the extremities, an Esmarch bandage is applied, and the tourniquet portion thereof is not removed until after the dressing of the parts is completed. After the cavity is filled by the transplantation material, the periosteum, as far as possible, is sutured over the same. A small absorbable catgut-drain is placed in the most dependent angle of the wound. The primary bandage is not disturbed under fourteen days; the second is not disturbed until the healing process is complete (from one to three months, varying with the patient's age).

THE THERAPEUTICS OF CHRONIC GONORRHOEA.

Fleiner, Heidelberg (*Centralblatt f. Chirurgie*, No. 5, 1890, p. 86). F. recommends the use of medium sized smooth steel sounds, anointed with the following: *Argent. nitrates* 1.0, *cera lav.* 2.0, and *ol. theobrom.* 17.0. This is mixed and molded into a tablet. The sound is prepared for use by heating it over a spirit lamp, and bringing it into contact with the preparation while sufficiently warm to melt the latter.

Unna doubts the usefulness of this procedure, inasmuch as the preparation is not at all likely to remain upon that portion of the instrument which reaches the deep urethra, the usual site of the origin of the discharges in chronic cases. He is in the habit of using, in

cases in which the gonococcus is absent, a daily injection of a half or one-per-cent. solution of soap, for the purpose of removing the accumulated and adherent mucus.

THE INJECTION TREATMENT OF ACUTE GONORRHOEA.

Friedheim (*Archiv. f. Dermatologie und Syphilis*, 1889, Heft 4.) In the therapeutics of gonorrhœa there are two diametrically opposite standpoints from which the treatment is to be viewed. The one may be considered as the expectant, inasmuch as those who view the disease from this standpoint simply wait upon the natural course of the disease, perhaps encouraging this by the use of balsam of copaiba and the like; the other is that which suggests the prompt employment, in the acute stage, of the local injection treatment. The latter course has found favor in Neisser's clinic for several years, and is ably discussed by F. The question, however, is not only whether or not to use injections, but what is to be employed for this purpose. In the selection of medicaments two things are to be kept before us: 1st, the removal of the cause, *i. e.*, the destruction of the gonococci, and 2d, the antiphlogistic, secretive, restraining treatment of the mucous membrane. The results of trials with many widely differing remedies are given. None, however, were found to be so generally useful as a weak solution of nitrate of silver (1-3 or 4000) in their constant antiseptic effect, and the use of which gave rise to fewer disagreeable features. The injections are commenced at the very beginning of the disease, and the progress made is determined by occasional microscopical examinations of the urethral secretion. When the gonococci have disappeared, the silver salt is replaced by weak astringents (zinc, boric acid, bismuth, etc.), salicylate of mercury, chloro-borate of soda, and sulphate of thallium likewise give good results.

EXPERIMENTAL RESEARCHES UPON IRRIGATION OF THE PERITONÆUM.

P. Delbet (*Annales de gynéc.*, t. xxxii., p. 165.) The experiments of D. upon flushing of the peritoneal cavity are of especial interest to the surgeon. Living animals and cadavera were both made use of in his studies. His results and conclusions may be summed up as follows:

1. The fluid employed finds its way into all portions of the abdominal cavity, flushing the peritonæum completely.
2. It is, however exceedingly difficult, and frequently impossible, by this means alone to remove from the peritonæum foreign substances (blood clots, pus corpuscles, bacteria, etc.). In cases of existing peritonitis, simple flushing of the cavity is absolutely useless.
3. Following the flushing there remains considerable of the fluid, which collects in the lesser pelvis, as well as the iliac and lumbar fossæ.
4. Flushing of the peri-

toneal cavity by means of a 7-1000 solution of common salt at a temperature varying from 18° to 50°C., exerted no perceptible influence upon the respiration and circulation. According to this, its employment may be considered to be unattended with danger. This, however, is at variance with previous observations in man. 5. The flushing, even with a fluid at high temperature (45° to 50° C.) appears to exert no hæmostatic influence in the peritoneal cavity. 6. During the first few minutes of the flushing, considerable quantities of the fluid are absorbed. This would furnish a ready means of transfusion. 7. The peritoneal cavity may be safely irrigated with a toxic fluid, providing the precaution be taken to employ preliminarily for ten minutes a salt solution, and to follow the toxic fluid by a similar irrigation.

D. lays down the following as indications for flushing the abdominal cavity: 1. Cases in which, during a laparotomy, septic material may have diffused itself in the peritoneal cavity. 2. Cases in which the cavity was infected prior to operation by pus, fæces, etc. 3. Cases of septic peritonitis. 4. Cases of tuberculous peritonitis.

CARCINOMA OF THE UPPER LIP.

Eschweiler (*Deutsche Zeitschrift f. Chirurgie*, Bd. 29, p. 355), Thirty-two cases of this somewhat rare location of carcinoma are studied. The average age of the patients was sixty years. As in the lower lip, excoriations or other lesions of the skin were observed to precede the development of the disease; lupus was found to be especially frequent. 67.7 per cent. of the cases were males. According to von Bergmann's estimate, 90.78 per cent. of all cases of carcinoma of the lower lip occur in males. The proportion of cases of carcinoma of the upper as compared with the lower lip in the material gathered from the Bonn clinic is found to be 1 to 17, and in the Strassburg clinic, 1 to 12 (von Bergmann estimates it at 1 to 25).

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

CARCINOMA RECTI AS AN INDICATION FOR PREMATURE LABOR AND A CAUSE OF PUERPERAL FEVER.

Löhlein (*Zeitschrift f. Geb. und Gyn.*, Bd XVIII., H. 1). Owing to the recent advances in abdominal surgery pelvic tumors figure less prominently than of old as an indication for premature artificial labor. Kürsteiner and Kaltenbach have each reported a case in which the

Cæsarean operation was done for narrowing of the birth-canal caused by cancer of the rectum. L. recently brought on labor early in the eighth month, in a case of rectal cancer mainly because the rapid progress of the growth would have rendered the case inoperable by extirpation at term. The enormously increased blood-supply, however, made the operation a formidable one by reason of hæmorrhage.

The author thinks artificial abortion justified in most cases of rectal cancer discovered before the period of viability. The case cited was the cause of septicæmia in a puerperal woman and in two new-born children. The infecting material was believed to have been conveyed by a pupil nurse who had not observed antiseptic precautions.

AXIS-TRACTION.

Dr. Langstaff (*Am. Jour. Obstet.*, January, 1890) describes a new device for securing axis-traction. An oval brass plate is placed beneath the sacrum, the patient lying in the dorsal position; a chain is attached to the free edge of the plate; the ordinary forceps is applied as usual and locked, a loop of the chain being slipped over the handles and made to encircle the forceps shanks at the lock; the forceps is now used as a lever, the loop of the chain serving as the fulcrum; by raising the handles the blades are made to descend in the axis of the birth-canal. The instrument is removed when the occiput lies in the pubic arch.

THE TREATMENT OF RUPTURE OF THE UTERUS.

Schaeffer (*Am. Jour. Med. Sc.*, January, 1890) enunciates the following propositions:

Laparotomy is most successful in cases in which the foetus escapes into the peritoneal cavity with membranes intact, recoveries following in sixty to seventy-seven per cent.

Rupture of the uterus with escape of liquor amnii into the abdomen is attended with forty-four per cent. of recoveries after laparotomy when no other operation has been previously attempted; but twenty-five per cent. when other measures have first been unsuccessfully tried, or when the vesico-uterine pouch has been opened.

When abdominal viscera, with or without perforation, prolapse into the uterine rent about thirty per cent. recover by laparotomy.

When the rupture has invaded the vaginal fornices but one case has been saved and that by uterine amputation.

Porro's method gives better results than simple laparotomy.

When the cervix and vagina are extensively lacerated;

When peritonitis has begun;

When the anterior wall of the uterus ruptures and amniotic fluid escapes ;

When other operations have been previously attempted.

ŒDEMA NEONATORUM IDENTICAL WITH PHLEGMASIA ALBA DOLENS.

Dumas (*Annales de Gynéc.*) holds that œdema of the new-born is a symptom of phlegmasia alba dolens developed within the first few days after birth. The pathological condition differs only in this, that in the infant thrombosis occurs more frequently in the inferior vena cava than in the adult. The prognosis is graver in the new-born child than in the adult patient. For prophylaxis the author emphasizes the importance of fully establishing the respiration immediately after birth and of late ligation of the cord.

SUBSEQUENT BEHAVIOR OF CASES OF EXTRA-UTERINE PREGNANCY TREATED BY ELECTRICITY.

Brothers (*Am. Jour. Obstet.*, February, 1890) has collected ten recorded cases of extra-uterine pregnancy treated by electricity which, in addition to those previously collected by him, make a total of fifty authenticated cases. Several others to be found in the literature of the subject were omitted owing to insufficient data.

From a critical study of the after-history of these cases he deduces conclusions substantially as follows :

1. Galvanism or faradism is a reliable fœticide in the early months of extra-uterine gestation.
2. The risk of rupturing the fruit-sac by the use of electricity is slight if indeed it exists at all.
3. Suppuration of the dead fœtal mass has not occurred in any case in which the fœtus was killed by electricity before the end of the third month.
4. Beyond the third or possibly the fourth month fœticide by electricity should not be resorted to.
5. Electro-puncture is to be condemned in all cases.
6. In the event of mistaken diagnosis no harm is done by the electrical treatment.

VARIETIES AND CAUSES OF EXTRA-UTERINE PREGNANCY.

Zincke (*ibid.*), after a comprehensive analysis of the views of different authorities, concludes that the following forms of ectopic fœtation must be recognized, viz. : Ovarian, tubal, interstitial, abdominal, with various subdivisions. The scheme of Mr Tait (which, by the way, bears a striking resemblance to that of Dezeimeris, published in 1837) does not do justice to the facts. Tait's belief that a pregnancy orig-

inally tubal may be completely extruded from the tube, and that a secondary and wholly intra-peritoneal gestation may thus result—as in Maticki's case—and that an ovum may migrate even after the formation of the placenta is inconsistent with his disbelief in primary abdominal pregnancy.

As to the ætiology he thinks Tait's theory of desquamative salpingitis not well sustained. The disease would tend to destroy rather than promote the life and union of the male and female elements.

Diseased conditions of the tubes which would facilitate the passage of spermatozoa would as readily admit of the passage of the ovum impregnated or not, and thus have a tendency to prevent rather than cause ectopic gestation.

Tait's assumption that the male elements in fecundation do not normally enter the tubes is irrational, since spermatozoa have been found even upon the ovaries in the lower animals whose tubes are lined with ciliated epithelium.

THE TEMPERATURE IN PUERPERAL ECLAMPSIA.

Dr. Herman (*Br. Med. Jour.*, Jan. 18, 1890) reports five cases of eclampsia which go to refute the assumption of Bourneville that eclampsia raises while uræmia lowers the temperature. The temperature in some of the reported cases rose during the convulsions but, fell in the intervals and was at no time high. In others it was subnormal throughout.

BREECH EXTRACTION.

Paul Mantel (*Nouv. Arch. d'obstet. et de gyn.*, Dec., 1889) proposes to bring down a foot as a prophylactic measure in all cases before the breech becomes impacted in the excavation. He passes a hand into the uterus, pushes the breech into the iliac fossa and presses the first thigh against the abdomen when the leg falls spontaneously or may be hooked down with the index finger.

MECHANISM OF RESPIRATION IN THE NEW-BORN.

Dohen (*Nouv. Arch. d'obstet. et de gyn.*, Nov., 1889), from a study of this subject at the clinic of Königsberg, reaches the following conclusions:

1. The respiration of the new-born is thoracic.
2. The elevation of the thorax begins at the summit and descends progressively.
3. The tidal air averages 35 c. c. m., and reaches a maximum of 120 c. c. m.
4. The exchange of air is feeble in the first days after birth; at the end of the first week is a third larger than the first day.

5. Generally at the first inspiration the lungs are not filled with air, the alveoli unfolding only on the second day (a fact of medico-legal importance).

6. The respiratory curves of the new-born present no stationary points.

THE TIME ELEMENT IN SAVING THE PERINÆUM.

R. L. Dickinson (Am. Jour. Med. Sci., 1890) emphasizes the need of delay. The more slowly the head is allowed to escape the less the injury. Twenty to thirty minutes should always be insured, counting from the bulging of the pelvic floor until the face slips over. The methods of delay are chloroform and manual restraint. Experiments on the cadaver are cited to show that slow stretching of the skin or muscle will secure $\frac{1}{5}$ to $\frac{1}{4}$ more lengthening of the tissue before rupture, and $\frac{1}{4}$ to $\frac{1}{2}$ greater stress will be sustained without injury. The order of giving way was: 1. Adipose tissue. 2. Fascia. 3. Muscle. 4. Skin. Superficial lesions of skin and mucous membrane are not counted.

The skin of lean subjects gave way less readily than that of fat individuals. Between the ages of 18 and 20 skin stretched twice as far as between 30 and 35. When a double layer of any tissue was stretched by pressure from one side, the rupture always took place on the compressed side. Experiment showed that the perinæal body was thinned to an average of $\frac{1}{16}$ inch at the acme of distension. A table of 147 cases in which the distension was timed, gives the following results:

I. Primiparæ; slow delivery of head through vulva; lacerations,	-	15 $\frac{0}{0}$
(The ordinarily quoted figures are 21-34 $\frac{1}{2}$ %)		
II. Primiparæ; 33 slow forceps extractions; lacerations,	-	24 $\frac{0}{0}$
III. Multiparæ; slow deliveries; lacerations,	-	6 $\frac{0}{0}$
IV. Multiparæ; 9 slow forceps extractions; lacerations,	-	0 $\frac{0}{0}$
V. Ten rapid extractions of head (mostly breech cases); lacerations,	-	100 $\frac{0}{0}$
VI. Only one rupture through sphincter.		

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M. D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

CHRONIC KIDNEY DISEASE.

Bond (Amer. Jour. Med. Sci.) writes of symptoms and signs which are of value in the diagnosis of chronic kidney lesions. There is a physiological and pathological albumen. The first bears no relation to kidney disease, yet it must always be produced by some abnormal

conditions. Severe bodily exercise or great mental strain may be factors in its causation. Pathological albumen may exist without the cause being primary renal disease. *Variations of pressure in these organs*, such as changed cardiac conditions, pulmonary diseases or nervous irritations may produce, is frequently the cause of albumen in the urine. Albumen may also result from certain systemic disturbances.

The author believes that chronic renal disease results from certain causes by which the nutrition and the structural formation of the organs is interfered with and finally changed. Albumen means, then, the existence of these changed conditions for considerable length of time; and if these conditions really exist albumen will be found by chemical examination of the urine sometime during the progress of the disease. It is variable, however, both in amount and time of appearance. It may be found in one part of the day's urine and be absent in the others. Casts in the urine may be found from time to time. In some cases they are never found, and, like the albumen, may sometimes be present and sometimes absent. In the early diagnosis of kidney disease the author believes that albumen is more important than the casts, as the latter are secondary in time of appearance. The specific gravity is regarded of but little importance, unless the entire amount of solids passed in the day is ascertained.

There are certain conditions, shown in the outward symptoms of the patient, which are considered as highly important in making a diagnosis; they are the first manifestation of the diseased condition. These are:

1. Dyspnœa.
2. Vertigo and blindness.
3. Nausea and vomiting.
4. Swelling of extremities or face.
5. Muscular twitchings.
6. Fatigue without exertion.
7. Intercostal pain.
8. Headache.
9. Painful and frequent urination.
10. Liability to inflammation of serous membranes.

The author believes that the presence of any two of these conditions with albumen and casts is sufficient to make a diagnosis.

The amount of urea passed in the twenty-four hours is highly important. *The tendency in the history of chronic kidney disease is toward progressive diminution in the daily quantity of urea.* Such a condition in itself, without other urinary evidence, is considered as indicative of kidney disease. There is a very close relation between the patient's condition and the amount of urea daily excreted. They are considered as interchangeable. The passing of a small quantity of urea will in a

short time give rise to some of the symptoms above stated. The author believes that the finding of such a condition, even if there be no albumen or casts, is sufficient evidence to warrant the commencing of treatment.

[NOTE.—To this paper is added a table of fifty cases of chronic renal disease. From this paper the following analysis has been made. H. C.]

1. In females the average period of attack was 35 years.
2. In males the average period of attack was 47 years.
3. The youngest female was 15 years.
4. The youngest male was 6 years.
5. The oldest female was 68 years.
6. The oldest male was 75 years.
7. Among the females the liability to the disease was :

Between 20 and 30 years there were 7 cases.

"	30	"	40	"	"	"	11	"
"	40	"	50	"	"	"	6	"
"	50	"	60	"	"	"	0	"
"	60	"	70	"	"	"	2	"

8. Among the males the liability to the disease was :

Between 20 and 30 years there were 4 cases.

"	30	"	40	"	"	"	3	"
"	40	"	50	"	"	"	2	"
"	50	"	60	"	"	"	6	"
"	60	"	70	"	"	"	4	"
"	70	"	80	"	"	"	3	"

9. In 25 cases no albumen was found, but the amount of urea was small.

10. In 27 casts no casts were found.

11. 35 cases were without complication or other organic change.

12. The complications found were: chorea, rectal ulcer, asthma, cardiac conditions, pleurisy, impotence, chronic gastritis.

13. Of these cases 10 died, 14 improved, 16 became apparently well, and 10 recovered.

14. The treatment consisted in the use of diuretics, salines, carthartics, sudorifics, anodynes, stimulants, and paracentesis; frequent mention is made of nitro-glycerin.

CARDIAC NERVOUS SUPPLY.

Balfour (Edin. Med. Jour.) in discussing the symptoms of the senile heart, writes of certain theories regarding the cardiac systole. The impulse to contraction may be in the nervous ganglia, placed in the cardiac muscle; or there may exist a power of contraction in the muscular fibre itself. It is probably certain that nervous action does not initiate cardiac action; yet the nervous system is capable of

changing the heart's action or completely stopping it. Scattered throughout the substance of the heart, especially in the auriculo-ventricular sulcus, are many nervous ganglia. In addition to these a nervous network covers the heart's surface, having an intimate relation to these ganglia. The action of the *augmentors* is important. These nerves have a connection with the dorsal and cervical ganglia. The pneumogastric gives two cardiac nerves—the superior and the inferior. The superior nerve has a connection with the medulla. When the arterial tension is raised and the heart's movements are embarrassed, this nerve, by its vaso-motor reflex action, diminishes the tension by causing arterial relaxation and thus takes away the obstruction in front. The inferior branch is the great inhibitory nerve. By it any excessive action, due to the sympathetic system, is prevented or diminished. In normal cardiac action there is a perfect balance between the cerebro-spinal and sympathetic. Change in this balance will produce “vagaries” of the heart's action. It must be recollected that the blood state and the condition of the cardiac muscle may be factors, primary or secondary, in producing abnormal action.

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital; Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

ICTERUS BEI PERNICIÖSER ANAEMIE.

Bartels, J. (Berlin. klin. Wochenschr., 1889, No. 43), adds to the eleven cases already published, of icterus complicating pernicious anæmia, a twelfth, in which neither the clinical history nor the autopsy-findings indicated the liver as the origin of the icterus. He regards as the cause of the jaundice a rapid destruction of red blood-corpuscles, with consequent liberation of biliary coloring matters. This he believes also explains the rarity of this complication with pernicious anæmia; as generally the destruction of red corpuscles is not rapid, but occurs slowly and from time to time, admitting of elimination of these products of retrograde metamorphosis before they have accumulated sufficiently to produce the icterus.

HISTOLOGY AND MORPHOLOGICAL VARIETIES OF GENUINE ACUTE NON-PURULENT ENCEPHALITIS.

M. Friedmann (*Neurologisches Centralblatt*, 1889, No. 15) says that experimental induction of traumatic encephalitis teaches the division into purulent and non-purulent encephalitis, which may also be applied to encephalitis in man. F. distinguishes five varieties of non-purulent encephalitis, of which the first group is the most characteristic. Here the essential finding is a close assemblage of large, active, round, or cornered epithelioid elements, which appear more homogeneous, but often laden with fat or myelin molecules, and in opposition to the granular cells display a normal nucleus. This last shows chromatin-augmentation and occasionally well-formed karyokinetic figures. Aside from this are found swollen axis-cylinders neuroglia cells, round cells, infiltrated hypertrophied vessel walls, and, in insignificant numbers, granular cells. The epithelioid cells result from proliferation of fixed connective-tissue corpuscles, principally the neuroglia cells.

This acute non-purulent encephalitis with active cell-growth appears pure, and, further, accompanying purulent acute convexity meningitis; lastly after innocent embolism.

The second form F. characterizes as active swelling of neuroglia cells combined with similar swelling of the axis-cylinders. To the typical picture belong numerous granular cells, round cells, and hypertrophying vessel walls, while the epithelioid elements are either fewer or wanting. Uncomplicated this form is rare; on the contrary, one finds the same after innocent thrombosis and embolism, by encephalomalacia, by Virchow's encephalitis of the new-born, etc.

The third form F. calls hæmorrhagic encephalitis, which Wernicke stated as the basis of his poli-encephalitis acuta superior. F. saw such a hæmorrhagic inflammatory focus in the second frontal convolution, close under the forward central convolution, which, during the four days' duration of the disease, caused choreic movements on the other side of the body. Essentially the findings are capillary hæmorrhage and abundant accumulation of granular cells.

In the fourth group F. places those inflammations from which the simple scars, cysts, and sclerosis spring, in so far as these are not conditioned through embolic or thrombotic softening.

The fifth group includes gummatous encephalitis.

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

SCLEREMA AND ŒDEMA NEONATORUM.

J. W. Ballantyne, M.D., F.R.C.P. Ed. (Brit. Med. Jour., Feb. 22, 1890). After pointing out the misapplication in text-books of these terms, he relates typical cases, and adds: "*Sclerema* may be provisionally defined as a rare disease, occurring most commonly in the new-born infant, characterized by induration of the subcutaneous tissue and being little amenable to treatment. Until the pathology of *sclerema* and the nature of the physiological processes underlying its pathology are more fully understood, a more scientific definition than that given above is, I think, impossible.

Œdema neonatorum may be defined as a disease of the new-born infant characterized by serous infiltration of the subcutaneous tissue due in most cases to infantile cardiac, renal or pulmonary disease. . . . It is possible that *œdema neonatorum* and general dropsy of the fœtus may be confounded, . . . but general dropsy is a disease of the fœtus and not of the infant. The prognosis is very grave in both diseases, very few scleremic or *œdemic* infants recovering.

Treatment.—In both diseases the infant affected should be placed in an incubator. Friction with a stimulating liniment is indicated, as is also gavage. In cases of *œdema*, where there is suppression of urine, it would be well to try the effect of *digitalis* fomentations to the loins and of diuretics internally."

ELONGATION OF THE UVULA AS A CAUSE OF LARYNGISMUS.

Lenox Browne (Brit. Med. Jour., Feb. 15, 1890). "Elongation of the uvula in the case of young children, the faucial tonsils not being enlarged—though I cannot agree with Dr. Ringer that this last condition may not occur in earliest infancy, or indeed may not be congenital—is due of course to paresis of the soft palate, which in its turn is almost invariably caused by enlargement of the pharyngeal tonsil, otherwise known as adenoid growths. In fact, I have a tolerably sure conviction that in almost every case of laryngismus, as well as in those of tetany and convulsions, the subject will be found to be a mouth breather, and that if sought for, adenoid growths would always be discovered. I have but rarely had occasion to reduce the elongated uvula of a child by abscission, for I have found that removal of enlarged tonsils, whether faucial or pharyngeal or both, will in the majority of cases lead to restoration of the muscular contractility of the soft palate without further treatment."

THE CAUSES OF LARYNGISMUS IN YOUNG CHILDREN, WITH SPECIAL REFERENCE TO ITS PRODUCTION BY ELONGATION OF THE UVULA.

"Alfred Mantle, M.D., Durham (Brit. Med. Jour., Feb. 8, 1890). There is no doubt that rachitis predisposes to laryngeal spasm—a likely cause—the weakened and deformed chest wall interfering with the proper and complete aeration of the blood, for we believe that increased venosity tends to continual excitement and irritation of the respiratory centres. Other causes are recurvature of the epiglottis and enlarged bronchial glands. Three or four years ago I saw a child, eight weeks old, decidedly ricketty, who had suffered from laryngismus for four months. Tonsils were hardly visible, but uvula and palatal folds were congested and thickened with a viscid secretion about the parts. Astringents locally, and bromides internally, were of no avail. I removed the uvula, and, with the exception of one slight attack on the same evening, no further spasm took place, and the child is now a strong healthy child."

HYSTERIA IN A BOY.

Prof. R. L. Macdonnell, B.A., M.D. (N. Y. Med. Jour., Feb. 8, 1890). Sept. 20, 1887, a delicate boy of thirteen years was admitted to the Montreal General Hospital. Began to be sick one year previous with vomiting and dull pains in both legs. Nov. 1886, began to cough, and coughed for ten days. Jan., 1887, cramps in legs. Legs gradually became flexed on the thighs and spasms affected various parts of the body. Boy gradually lost the power of speech, and had a hacking cough, said to be not unlike the barking of a dog. He had always been self-willed. There was a nervous tendency on the mother's side of family. Separated from his family and brought to the hospital, he was etherized and limbs straightened as well as possible and put in splints. After etherization, cough disappeared. Care was taken not to express sympathy nor to notice that he was dumb. No medicine prescribed. In three months could use his legs. Oct. 4, speaks plainly. April 26, 1889, has grown tall and stout, is in good health; has not been ill since he left the hospital.

A PENAL RULE OF OUR COMMON SCHOOLS AND SOME OF ITS EFFECTS.

David S. Booth, M.D., Sparta, Ill. (Jour. of Am. Med. Asso., Mar. 1, 1890). The writer gives the following rule in use probably in Sparta. "All children going out in time of the school session will be kept in one-third of the recess;" and tells of a number of instances where by retention of urine and fecal matter—the children not being allowed to attend to their wants during the session—much damage has been done and one death caused. He advocates, with Prof. J. A. Larrabee, of Louisville, the office of medical inspector of schools.

GYNÆCOLOGY.

BY A. H. BUCKMASTER, M. D.,

Assistant Surgeon to the Woman's Hospital in State of New York.

ALLEGED CASE OF OVARIAN PREGNANCY.

An editorial in the *British Medical Journal*, Jan. 25, 1890, states that the possibility of ovarian pregnancy is stoutly denied by many authorities; while others, including Freund, declare that such a variety of ectopic gestation really exists. Freund's evidence rests upon cases where he performed abdominal section; but pregnancy was advanced, and the primary relations of a foetal sac cannot, under the circumstances, be determined with accuracy. A sac in the midst of a Fallopian tube is visible to the naked eye. We can all see specimens of this condition, and believe. In order to believe, likewise, in ovarian gestation, a specimen in the earlier stages, where the primary relation of the foetal sac to the ovary is evident, must be demonstrated. Such a specimen is, to say the least, very rare in museums.

The Russian *Journal of Obstetrics and Gynecology*, No. 6, 1889, contains record of an alleged case of ovarian pregnancy. A woman, aged twenty-seven, became pregnant in October, 1887; but labor never came on, and in September, 1888, she was seized with severe fever. A suppurating ectopic-gestation sac was diagnosed and laid open. The foetus, which was macerated, and had attained normal size at term, was extracted. Urine and fæces came away from the cavity of the sac. Patient died insane seven weeks after the operation; and at the necropsy the left ovary was found to be smaller than normal; the left tube stretched, pervious and not dilated. The foetal sac was connected with the left ovary, and its outer wall was found to be, in the opinion of Dr. Muratoff (who reported the case), a continuation of the tunica albuginea of the ovary.

Dr. Reimann, of Kieff, in commenting on Dr. Muratoff's interpretation of the case, in the *Centralblatt f. Gyn.*, Dec. 28, 1889, displays skepticism. The writer considers the sac to have been tubo-ovarian, and had become attached from its tubal connections.

A CASE OF MURAL PREGNANCY TERMINATING NATURALLY.

Dr. S. T. Lowry (*Texas Courier Record*, September, 1889) reports the case of a woman who consulted him in regard to a supposed pregnancy. She had not been with child for twenty years, but now suffered suppressed menstruation, sick stomach, mammary discoloration, and abdominal enlargement.

The doctor, after investigating the case, passed the sound, and found the uterus empty. At the end of the seventh month Dr. Lowry was hastily summoned to the house of his patient, who was passing liquor amnii. "The abdominal walls had been rendered quite flaccid from the abundant watery discharge, so that an irregularly shaped tumor could be very plainly outlined lying on the right side up, and closely attached to the uterus. The os was not sufficiently patulous to admit the finger, but the introduction of a large, blunt sound came firmly against the fundus, at a depth of about five inches. However, on deflecting the sound to the right, it readily entered the Fallopian opening, and passed fourteen inches above the uterine os. By gentle manipulation with the sound the irregular outlines of an object could be felt, and I was now fully convinced that I had a case of extra-uterine pregnancy to deal with." No fetal heart could be detected.

A consultation of two physicians was called, and they fully concurred in the diagnosis. The next day a large, round body, "resembling a fetal head, could easily be felt through the anterior or vaginal wall and in very close proximity to the uterus. A large sound passed into the uterus could outline this body as it was impinging upon the right Fallopian opening."

On the following day a living female child was delivered *per vias naturales*. "The placenta failing to come away, it became necessary to introduce the hand in order to detach it. The uterine cavity proper was found just about large enough to contain the closed fist and entirely empty; but the hand was readily passed, through an opening on the right, into a larger cavity, where the placenta was found attached to its upper surface. Baby died, and patient made good recovery."

TREATMENT OF CANCER OF THE UTERUS BY THE GALVANO-CAUTERY.

Dr. John Byrne (*Boston Medical and Surgical Journal*, Oct. 31, 1889) gives the results of his method of treatment in 367 cases, 121 of which had been lost to observation before the end of the first year after operation. In 59 cases the vaginal portion of the cervix was alone involved. Of the cases kept under observation, the average period of exemption from recurrence was eight years and seven months. In 81 cases, in which the entire cervix was affected, the average period of exemption was five and a half years; and in 8 cases, in which the disease was confined to the body of the uterus, the average was two years.

The diseased tissue is to be removed as completely as possible by the galvano-caustic loop, then cauterize the mucous membrane of the uterus with an instrument which is to be introduced cold, and then heated by the current; and finally to thoroughly cauterize the stump of the cervix. The parts must be wiped very dry when the cautery is

applied, and this should always be introduced when cold, and the current not turned on until the instrument is *in situ*, touching the tissues which are to be destroyed. The cauterization must be very thorough, and should be repeated at the slightest signs of recurrence.

The author did not claim for the operation more than the affording of long continued relief—not absolute cure—and the almost complete freedom from danger in its employment. He was strongly opposed to hysterectomy, believing it to be no more effective—even if equally so—than his method, while it is infinitely more dangerous.—*Méd. Annul. et Epit.*, January, 1890.

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

SOME SYMPTOMS OF CHRONIC ARSENICAL POISONING.

Report by Drs. Bronardel and Pouchet (*Gazette des Hopitaux*, Nos. 112–113). This report is of interest both to the dermatologist and general practitioner; it gives the experiences of several medical gentlemen both of France and Belgium. Not only even the more ordinary and generally noted symptoms, as of irritation of skin with erythemas and the like, these of the bronchial and intestinal mucous membranes as well; but the resultant hyperæsthesias of the extremities, more particularly the lower, are given a good deal of attention—peculiar acrodynic pains and the functional disabilities which occasionally occur, almost amounting to paresis, etc. A recent case occasioned by long-continued use of Fowler's solution in large doses (from error in supposed instructions of the doctor) has been lately observed by us in Brooklyn Hospital, in which the nervous symptoms spoken of in the report were very marked. It simulated a case of locomotor-ataxia, and recovery was very slow, though absolute eventually. Drs. B. and P. particularly emphasize the slow elimination of this poison in these chronic cases, the cancellated tissue of bone being, as it were, the last reservoir; it being found there on analysis after autopsy, when it could not be discovered elsewhere.

THE DENGUE FEVER,

With Special Description from Observation of the Epidemic in Constantinople in the Summer of 1889. By Dr. F. Von Düring, Professor of Derm. and Syphilis in the Imperial Med. School, Constantinople, etc. (*Monatshft. f. Prackl. Derm.*, vol. x., No. 1, 2, 3, 1890). This truly

deserves the name of a classical monograph instead of a simple article on the subject, and contains as part of its matter a most valuable synopsis of the literature of the subject, remote and recent.

The author describes the epidemic naturally with greatest reference to the phenomena in the skin, and the various eruptions caused by it, but neglects nothing else of interest occurring in the general economy. There are so many points of interest that it is almost invidious to select one; but still, in view of the late prevailing epidemic, "La Grippe," which some considered to be a form of, or else connected with, the "Dengue," on account of the rheumatoid or neuralgic pains in back and lower extremities, it may be stated that, in the epidemic the author treats of, pulmonary and bronchial complications were very rare and pneumonia almost unknown. The mucous membranes of the intestinal canal, etc., were, on the contrary, usually affected. The chief symptomatic course was in order of gravity, nervous system, and either primarily or secondarily the circulatory system, next skin, next mucous membranes of chylipoietic system. Its contagiousness was very marked, of which he gives numerous confirmatory instances.

Recommends fairly free purgation, in commencement at least, his favorite means for which was *hunyadi janos*. Rest in bed. Some of his colleagues, he says, used antipyrin; he did not. He gave sulfonal for relief from sleeplessness; did not use quinine much, as its use seemed to be contraindicated by the irritability and hyperæmia of gastric mucous membrane.

SOME SYMPTOMS OF CHRONIC ARSENICAL POISONING.

(Report by Drs. Brouardel and Pouchet, *Gazette des Hôpitaux*, Nos. 112, 113.)

This report is of interest both to the dermatologist and general practitioner; it gives the experiences of several medical gentlemen, both of France and Belgium. Not only were the more ordinary and generally noted symptoms—as of irritation of skin with erythemas and the like, those of the bronchial and intestinal mucous membranes as well—but the hyperæsthesias of the extremities, more particularly the lower, are given a good deal of attention, peculiar acrodynic pains and functional disabilities almost amounting to paresis, etc. A recent case, from long-continued use of Fowler's solution, in large doses (from error in supposed instructions of the doctor), has been lately observed by us in Brooklyn Hospital, in which the nervous symptoms spoken of in the report were very marked. It simulated a case of locomotor ataxia, and recovery was very slow, though absolute eventually.

Drs. B. and P. particularly emphasize the slow elimination of this poison in these chronic cases, the cancellated tissue of bone being, as it were, the last reservoir; it being found there on analysis when it could not be discovered elsewhere.

BACTERIOLOGY.

BY B. MEADE BOLTON, M.D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

ON THE INFLUENCE OF THE SEASONS OF THE YEAR AND OF WEATHER UPON THE APPEARANCE OF INFECTUOUS DISEASES, WITH SPECIAL REFERENCE TO LOCAL OUTBREAKS.

Ernst Almquist (*Zeitschrift f. Hygiene*, Bd. v. Heft 1), in the article with the above title, has published the results of quite exhaustive study of statistical material in Scandinavia. He also compares these statistics with those of other countries of Europe, especially Germany. The diseases studied are: Measles, typhoid fever, diphtheria, cholera, dysentery, malaria, cerebro-spinal meningitis, small-pox, scarlet fever, typhus exanthematicus, infantile diarrhœa, pneumonia, and bronchitis. The first three diseases were studied with special care. A. uses the term infectious diseases merely as a collective name, not meaning to decide whether all the diseases on the list are infectious or not.

Some of the diseases may occur at any and all seasons. Others show a distinct connection with the seasons of the year, appearing at certain definite times in short epidemics; in epidemics of several years' duration, showing a tendency to abate at certain periods of the year. In the latter, the maximum and minimum show themselves at the same periods year after year.

Measles is the type of the diseases of the first class, occurring in winter or in spring with an equal number of cases. It is readily contracted at the bedside. In Sweden the occurrence of epidemics of measles is greatly influenced by the difference in the intercourse between different places at different times of the year. Weather does not seem to have any influence; neither does cleanliness. Certain other diseases, such as small-pox, also probably belong to this class.

All of the above diseases not transmissible directly at the bedside are influenced, in their local outbreaks, by the seasons of the year, leaving out of consideration the influence of intercourse between different places. Some of these diseases, such as dysentery, occur almost exclusively at certain times of the year; others, such as typhoid fever, may occur at any season, but show a maximum at certain seasons, when they appear as epidemics.

The diseases, when uninfluenced by intercourse between different places, fall into three groups: Summer-autumn, winter, and spring diseases. Diarrhœas, cholera, dysentery, and typhoid fever belong to

the summer-autumn diseases. Some of the summer-autumn diseases show a tendency to have a second but smaller rise in winter. This is true of cholera, typhoid fever, and children's diarrhœas. This class of diseases is probably influenced by the cleanliness and drainage of localities, and possibly also by the behavior of the weather in different years.

Diphtheria belongs to the winter diseases, having its maximum in the months from November to February, and its minimum in summer or autumn, at least in Sweden and Germany. Catarrh of the air-passages generally shows a curve corresponding to that of diphtheria. But croup is seen oftener in spring, and approaches nearer to the third class. Winter diseases are probably little affected by drainage and cleanliness.

Pneumonia is classed as a spring disease because in Sweden and Germany the most cases occur at this season, but it may show a tendency in Sweden to rise in January. Malaria shows most cases in spring, but the time of infection is in summer, and it has a long period of incubation.

In Göteborg the drainage and increased cleanliness did not make any difference in the number of cases of pneumonia.

The author does not regard the explanations given for the manner in which the seasons and weather influence epidemic diseases as satisfactory. He regards it as an extremely complex question. Meteorological observations alone do not explain much. Perhaps, by keeping in mind the direct and indirect causes, the question may become elucidated. Heat and cold act directly upon the growth of pathogenic micro-organisms and upon the human body, causing a predisposition in the latter. Indirectly the construction of our dwellings, our methods of life, and the intercourse between different places influence the predominance of infectious diseases.

The reader is referred to the original article for the results of A.'s elaborate study of the individual diseases.

ARTICLES OF DIET AS NUTRIENT MEDIA FOR TYPHOID FEVER AND CHOLERA BACTERIA.

Dr. W. Hesse (*Zeitschrift f. Hygiene*, Bd V., Heft 3) has tested a great variety of food-stuffs as media for bacteria. He took ordinary cooked and uncooked food, just as found in the kitchen, and planted cultures of typhoid fever and cholera bacteria upon them, and then tested to see whether the bacteria were alive after four or five weeks. The articles so tested were:

Raw beef, milk, chopped meat (cooked), rice (boiled in soup), boiled potatoes, spiced soup, infusion of meat (made alkaline), boiled

dry beef, acid and weakly acid meat-infusions, blood-pudding (containing a great deal of fat), boiled white of egg, cheese from cow's milk, bread-crust, hydrant-water, salty ham-soup, souse-cheese, rice-soup, pea-porridge with ham-soup, fresh liquid white of egg, spiced soup, freshly boiled egg, string-beans, lumps of potatoes from soup, do. with string-beans, mushrooms, turnips, rice-flour soup, and milk-grits porridge (with and without sugar).

The results of these investigations show that nearly all of the above substances are good nutrient media for the bacilli of typhoid fever and cholera. Typhoid-fever bacilli and cholera bacilli were found to have died out in hydrant-water, on string-beans, and cow's milk cheese.

Typhoid-fever bacilli alone had died out on mushrooms.

Cholera bacilli alone had died out on raw beef, potatoes, blood-pudding, acid meat-infusion, bread-crust, and ham-soup.

Especially good nutrient media for both were: Milk, chopped meat (cooked), spiced soup, meat-infusion (made alkaline, or which was only slightly acid), white of egg, souse-cheese, bean-porridge with ham-soup, milk-grits porridge with sugar, and potatoes.

NEW OBSERVATIONS ON (THE CONNECTION BETWEEN THE SPREAD OF AN EPIDEMIC OF) TYPHOID FEVER AND A DAIRY.

Ernst Almquist (*Zeitschrift f. Hygiene*, Bd. VIII., Heft 1) reports observations made by Dr. K. Sunderberg on an epidemic of typhoid fever in a small country community, of about three thousand people, in Sweden. The houses were distributed all over the neighborhood at about ten kilometres apart. Several of the houses were not visited by the epidemic, but all of those in which typhoid fever occurred had a common milk-supply. The custom which prevailed was for all the dairy-farmers to send their milk to a common creamery, where it was poured altogether into a large vat and the cream removed by a separator. The skimmed milk was returned to the farmers. This was the only source of common danger, and seems beyond doubt to have been the source of the epidemic.

ASPOROGENIC ANTHRAX BACILLI.

Dr. E. Roux (*Annales de l'Institut Pasteur*, Tome IV., No. 1) has made the interesting observation that by cultivating anthrax bacilli in calf-bouillon, to which phenol is added, he obtains a variety of the organism, which does not subsequently form spores under any circumstances. The bacilli are just as virulent as those which have not lost this power. The proportion of phenol required to so modify the bacilli depends upon the composition of the bouillon, the source whence the bacilli are obtained, and the facility of access of air to the cultures.

Where the air has very ready access the bacilli do not lose their spore-forming power as quickly as where the air is not often renewed. In calf-bouillon, containing 6 : 10000 or more of phenol, the bacilli generally lose their spore-forming power. This observation, along with the fact that anthrax bacilli and other pathogenic organisms lose their virulence under certain circumstances, shows that some of the distinguishing characteristics assumed for micro-organisms cannot be relied upon as constant.



NEW BOOKS AND BOOK NOTICES.

All books received by the JOURNAL are deposited permanently in the Library of the Medical Society of the County of Kings.

Hereafter, in describing the size of books in this department, we will avoid confusion by using the abbreviations and size classification of the American Library Association.

These abbreviations refer to the size of the page, without any reference to the old fold system, viz. :

F, folio, over 30 cm. ; Q, quarto, under 30 cm. ; O, octavo, under 25 cm. ; D, duodecimo, under 20 cm. ; S, sixteenmo, under 17½ cm. ; T, twenty-fourmo, under 15 cm. ; Tt, thirty-two, under 12½ cm. ; Fe, forty-eightmo, under 10 cm.

nar., narrow, width less than ¾ height ; sq., square, width more than ¾ height ; obl., oblong, width more than height.

Our New York neighbor, the *Journal of the Respiratory Organs*, begins its second year dressed. A year ago it came into the world naked, but its enterprising publishers have this year provided a cover of distinctive design. A distinctive cover is appreciated by those who handle and read more than one journal. We learn to recognize our favorite periodical among a number of its fellows by its familiar dress. For the same reason it is unwise for a journal to make radical changes in its appearance.

THE AMERICAN ACADEMY OF MEDICINE: ITS OBJECTS, ITS SIGNS OF PROMISE AND ITS OBSTACLES, ITS FIELD OF WORK, AND SOME SUGGESTIONS LOOKING TO AN INCREASE OF ITS EFFICIENCY. By Leartus Connor, M D., President of the Academy. S, pamph., pp. 43. Reprint from Am. Lancet, December, 1889.

THE PINE BELT OF NEW JERSEY: A REGION OF SANDY SOIL AND LIME FORESTS. By Isaac Hull Platt, M.D., of Lakewood, N. J. O,

pamph., pp. 9. Reprint from Transactions of the Am. Climatological Association, June, 1889.

The doctor's three years' residence at Lakewood renders him peculiarly fitted to treat the subject, of which we trust he will have more to say in future monographs.

HIGHER MEDICAL EDUCATION, AND HOW TO SECURE IT. The Annual Address before the Alumni Association of the University of Maryland. By Richard H. Lewis, M.D., of Raleigh, N. C. O, pamph., pp. 20.

The doctor is a firm believer in the efficacy of State examining-boards, and says: "I am thoroughly convinced, as are, I believe, most of the friends of higher medical education, that the laws which accept no evidence of fitness than that afforded by the passage of a satisfactory examination, before some disinterested board, are the most effective."

He is a believer in the North Carolina system, which has been in operation since 1859, "because the board of examiners is a compact body of seven, elected by the State Medical Society without the interference of any power outside of its own members, and because the medical heresies have no representation on the board," though "the board do not reject an applicant, competent in other respects, on account of a difference of opinion in the matter of therapeutics."

LAWS REGULATING THE PRACTICE OF MEDICINE IN NORTH CAROLINA. O, pamph., pp. 7.

SANITARY ENTOMBMENT: THE IDEAL DISPOSITION OF THE DEAD. By Rev. Charles B. Treat. O, pamph., pp. 22. Reprint from the Sanitarian, December, 1889. A paper read before the A. P. H. A., in Brooklyn, October 23, 1889.

NINETEENTH ANNUAL REPORT OF ST. CATHERINE'S HOSPITAL, DEC. 1, 1888, TO NOV. 30, 1889.

During the year the facilities of the hospital have been increased by having a special ward set aside for the care of cases of consumption, where special diet and treatment have been given these patients. The increased number of those treated and the decreased number of those who have died show the wisdom and the success of this action.

In the surgical department too the authorities report new and increased facilities in the operating-room.

During the past year they have treated, in the hospital, 2,356 patients, of whom they have discharged cured 1,397, improved 450.

There have been 299 deaths among them, which is partly accounted for by the fact that St. Catherine's, unlike other hospitals of its class, receives dying and hopeless cases. No less than 74 patients died within forty-eight hours of their admission. Hospitals are generally very loth to bring down their record by receiving this class of cases.

AN EXPERIMENTAL STUDY OF INTESTINAL ANASTOMOSIS. With Some Practical Suggestions as to a Modified Technique. By A. V. L. Brokaw, M.D., of St. Louis, Mo. Q, pamph. Reprint from *Weekly Med. Review*, August 17, 1889.

MONOMANIA. By Clark Bell, Esq. O, pamph. Reprint from *Medico-Legal Journal*, September, 1889.

THERAPEUTIC USES OF OXYGEN AND HYDROGEN MONOXIDE BY INHALATION, BY ENEMA. O, pamph. A. K. Johnston.

SOME PHYSIOLOGICAL FACTS BEARING ON THE PRODUCTION OF THE NASAL VOWELS. By B. Loewenberg, M.D., Paris and Berlin. S, pamph. Reprint from *Med. Press and Circular*, June 19, 1889.

ACCUMULATORS AND THEIR MEDICAL USE. By Robert Newman, M.D. S, pamph. Reprint from the *Phila. Med. Times*, April 15, 1889.

SUICIDE AND LEGISLATION. By Clark Bell, Esq. O, pamph. Reprint from *Medico-Legal Journal*, June, 1888.

NINTH INAUGURAL ADDRESS OF CLARK BELL, Esq., as President of the Medico-Legal Soc. O, pamph. *Med.-Legal Jour.*, March, 1889.

THE FATALITY OF CARDIAC INJURIES. THE FATALITY OF HEART-WOUNDS, Part II. By H. A. Hare, M.D. S, pamphs. Reprints from *Med. and Surg. Reporter*, June 22 and August 10, 1889.

The conclusions drawn from Dr. Hare's monographs are as follows :

1) Death may occur in three ways : (a) by hæmorrhage from the cardiac cavities, or (b) the heart-muscle itself ; or (c) by injury to the so-called co-ordinating centre.

2) The lethal result of a heart-wound depends largely upon the rapidity with which a hæmostatic clot is found in the opening.

3) Heart-wounds heal by the formation of hæmorrhagic exudate, which plugs the leaking opening and permits repair.

4) That heart-wounds, however severe, are not necessarily fatal, simply because they are heart-wounds. Fatal results are brought about by pericarditis, cardiac-myositis, and endocarditis ; while a sequence even more rapid in its onset may be embolism or heart-clot.

VESSELS OF THE BRAIN. By Wm. Browning, M.D., of Brooklyn. Q, pamph. From *Buck's Handbook*. Illustrated with a chromolithograph plate of the arterial distribution over the convexity ; and the mesial surface. Together with an article on the Pacchionian Bodies of the Brain by the same author.

THE EFFECT OF THE ENTRANCE OF AIR INTO THE CIRCULATION. By H. C. Hare, M.D., of Philadelphia. O, pamph. Reprint from Therapeutic Gazette, September 16, 1889.

Dr. Hare's conclusions are that :

1. "Death never occurs from the entrance of air into the ordinary veins of the body unless the quantity be enormous—from one to several pints—a quantity which cannot enter unless deliberately sent in by the surgeon.

2. "The cases on record have been due to other causes than air, and have not been proved.

3. "The tendency of the vessel to collapse and the leakage of blood prevent any entrance of air; and it would seem probable that a clot has generally caused death, not the air itself."

A YEAR'S EXPERIENCE WITH APOSTOLI'S METHOD, with Reports of Cases. By A. Laphorn Smith, M.D., of Montreal. T, pamph. Reprint from New York Jour. of Obstet., August, 1889.

EIGHTH INAUGURAL ADDRESS OF CLARK BELL, ESQ., as President of the N. Y. Med. Legal Society. O, pamph

THE 118TH ANNUAL REPORT OF THE STATE OF THE N. Y. HOSPITAL AND BLOOMINGDALE ASYLUM FOR THE YEAR 1888. O, pamph. New York, 1889.

SECOND ANNUAL REPORT OF THE METHODIST EPISCOPAL HOSPITAL IN THE CITY OF BROOKLYN, N. Y.

RESUME OF THE EXPERIENCE OF SEVENTEEN YEARS IN THE OPERATION OF DILATING URETHROTOMY. By Fessenden N. Otis, M.D. O, pamph. Reprint from Med. Record, July 20, 1889. N. Y., 1889.

THE PERFECTED EVACUATOR. By Fessenden N. Otis, M.D. O, pamph. Reprint from N. Y. Med. Journal, August 29, 1889. N. Y., 1889.

INTUBATION OF THE LARYNX IN DIPHTHERITIC CROUP. Analysis of 200 Cases Operated Upon. By Dillon Brown, M.D. T, pamph. Reprint from N. Y. Med. Journal, March 9, 1889.

Besides his own cases, Dr. Brown gives an analysis of over 2,000 cases by 165 other operators in various parts of the world, with 27.3 per cent. of recoveries.

REPORT OF A CASE OF LAPAROTOMY WITH EXSECTION OF A PORTION OF THE ILEUM, AND A DESCRIPTION OF A NOVEL OPERATION FOR THE CURE OF URETHRO-RECTAL FISTULA. By John A. Wyeth, M.D. S, pamph. N. Y., n. d.

THE RATIONAL METHOD OF PREVENTING YELLOW FEVER ON THE SOUTH ATLANTIC COAST. By J. C. Lehardy, M.D., Savannah, Ga. Read before the Med. Association of Georgia, April 18, 1889. O, pamph. Augusta, Ga., 1889.

REFORMATION IN THE PRACTICE OF MEDICINE BY THE DOSIMETRIC METHOD OF PRACTICE; "or the Method of Small Doses of the Active Principles of Plants Mathematically Measured and Scientifically Adapted to the Varied Abnormal Conditions." With Biographical Sketch of Dr. Ad. Burggraave. By J. E. MacNeil, M.D. O, pamph. Reprint from the Dosimetric Review, July, 1889.

CASES OF OCULAR PARALYSIS. By Alvin A. Hubbell, M.D. O, pamph. Reprint from Buffalo Med. and Surg. Journal, September, 1889.

CONCEALED PREGNANCY: Its Relations to Abdominal Surgery. By Albert Vanderveer, M.D., of Albany, N. Y. O, pamph. Reprint from Am. Jour. Obstet., November, 1889. N. Y., 1889.

The writer gives a series of tables illustrating his subject of 27 cases of abdominal section complicated by pregnancy not diagnosticated before operation; 11 cases of pregnancy uncomplicated by new growths; 34 cases of abdominal section complicated by pregnancy not diagnosticated before operation, and 5 cases of pregnancy in bicornated uteri, etc., with a bibliography of the subject.

THE MANAGEMENT OF PULMONARY PHTHISIS. By Karl von Ruck, M.D. O, pamph. Ashville, N. C., 1889. Price, 50 cents.

Dr. Von Ruck is director of the Winzah Sanitarium, at Ashville, N. C., and believes that the treatment of phthisis "in an institution well conducted and equipped and located in a climate possessing immunity from the disease offers the best chances for the individual patient and leads to recovery in the greatest number of cases."

SCARLATINOUS OTITIS. By Chas. H. May, of New York. O, pamph. Reprint from Am. Jour. Obstet., April, 1889.

In conclusion the writer adds: "To what extent is the frequency of scarlatinous otitis, and to what extents is its severity influenced by the treatment of scarlatina, and especially by the treatment both general and local of those cases which are complicated by diphtheria?"

PUBLIC HEALTH RESORTS vs. INSTITUTIONS FOR THE TREATMENT OF BACILLARY PHTHISIS. By Paul H. Kretzschmar, M.D. T. pamph. Reprint from Med. Register, October 20, 1888.

URINARY CALCULUS AND LITHOTOMY. By Thos. W. Kay, M.D., of Scranton, Pa. O, pamph. Reprint from Md. Med. Jour. of March 16, 1889.

TESTS FOR DIABETES MELLITUS. By Palmer C. Cole, M.D., of New York, S, pamph. N. Y.: Trow's Printing and Bookbinding Co., 1888.

A CASE OF CARCINOMA OF THE EAR, having its Origin probably in the Tympanum or Mastoid Antrum. By Gorham Bacon, M.D., and A. T. Muzzy, M.D. O, pamph. Reprint from Archives of Otology, No. 1, 1888.

SECONDARY MIXED INFECTION IN SOME OF THE ACUTE INFECTIOUS DISEASES OF CHILDREN. By Bayard Holmes, M.D., of Chicago. O, pamph. Reprint from N. A. Practitioner, February, March and January, 1889.

FOOD LAWS: a Paper read before the Med. Jurisprudence Society of Philadelphia. By Henry Leffermann, M.D. O, pamph. Phila., 1888.

TYPHOID FEVER AND TUBERCULOSIS. Germs of the Former Disseminated in Ice, and of the Latter through the Flesh and Milk of Cattle. Consumption a Disease of Bovine Origin. A Paper read by J. G. Johnson, M.D., before the Society of Med. Jurisprudence and Medicine, New York, November 8, 1888. O, pamph. Brooklyn, 1888.

ELMER'S HANDBOOK, which has been published for more than thirty years by the W. A. Townsend Pub. Co., has been issued for 1890 by G. P. Putnam's Sons.

It has many features not found in the other "visiting-lists," containing as it does 135 pages of printed matter as well as the usual number of blank pages for calls, accounts, etc., the whole gotten up with thin fine paper so as to be no more bulky than the other books of its class in the market.

WOOD'S MED. AND SURGICAL MONOGRAPHS. Vol. II., No. 3, is a treatise on GENERAL ORTHOPÆDICS, including Surgical Operations. By DR. AUGUST SCHREIBER, Surgeon-in-Chief to the Surgical Division of the Augsburg Hospital.

A work on the treatment of deformities, a branch of the surgical art which has of late years made such marked progress, will unquestionably be welcomed; though a great many will regret that to obtain this valuable work, one is compelled to subscribe for the whole year's series, which while each has its individual value, may not be enough appreciated by the orthopædist to induce him to make the investment.

The work is very finely illustrated with nearly 400 engravings, and will by many be regarded as the best of the series.

The book will be welcomed by librarians and owners of large libraries for the reason that it at once finds its place on the classed shelves and catalogue, containing as it does but the one monograph, while many of its companions contain as many as four or five on as many subjects, puzzling the librarian to know where to place the book for future reference.

VOL. III., No. 1, of the series is an illustration of this, containing as it does five monographs, viz., a Lecture on

CANCER AND CANCEROUS DISEASES by SIR SPENCER WELLS, which makes us wish it was longer, since within thirty pages the able author has glanced at their frequency; nature and causes; the question of removal; cauterization and hysterectomy, in which he gives credit to his American brethren for having been before the English in adopting the operation of total excision of the uterus.

The second monograph is by Prof. Dr. S. VON BASCH, on CARDIAC DYSPEA and CARDIAC ASTHMA.

The third monograph is by Dr. L. GRELLETLY, consulting physician at Vichy, etc., on the INFLUENCE OF MENSTRUATION AND OF PATHOLOGICAL CONDITIONS OF THE UTERUS ON CUTANEOUS DISEASES. Within a few pages is concluded the doctor's fifteen years' observations upon the sympathy which he has observed between the utero-ovarian and the tegumentary systems, and concludes with certain considerations regarding etiology and therapeutics.

TENSION IN SURGICAL PRACTICE, INFLAMMATION OF BONE AND CRANIAL AND INTRACRANIAL INJURIES, by THOMAS BRYANT, F.R.C.S., is the fourth monograph of this number, and ANTISEPSIS AND ITS RELATIONS TO BACTERIOLOGY by Dr. J. NEUDORFER, of Vienna, the fifth and last. Truly a varied bill of fare, to feast the reader and puzzle the librarian.

VOL. III., No. 2, AUGUST, 1889, contains

THE TREATMENT OF SYPHILIS AT THE PRESENT TIME BY DR. MAXIMILIAN VON ZEISSE, of the Vienna University.

THE TREATMENT OF INEBRIETY IN THE HIGHER AND EDUCATED CLASSES BY JAMES STEWART. The author believes that "permanent recovery need not be hoped for unless treatment be pursued systematically during an uninterrupted period of twelve months in a 'Home' from which every beverage containing the smallest quantity of alcohol is absolutely excluded," and his monograph is on the "Home Treatment."

THE MANUAL OF HYPODERMIC MEDICATION BY DRS. BOURNEVILLE AND BRICON, OF PARIS. Translated by ANDREW S. CURRIE, M.D., of Edinburgh. Rearranged and revised for the use of American practitioners, which constitutes the third monograph and greater part of the volume, really helps to fill one of the long-felt wants we hear so much of, for the subject has not been over-written, since we have little besides Bartholow's well-known and excellent book, which gives us anything like a full treatise on the subject.

This monograph possesses the advantages of being very complete and yet concise, of containing a large number of formulæ, of being well up to date, and points out the disadvantages which have accrued or are apt to accrue from the use of certain drugs by the hypodermic method.

It is supplemented by a "Table of Antidotes and Antagonisms," a "Hypodermic Posological Table," a "Therapeutic Index of Diseases," and a very full bibliography of the subject.

Among the long list of excellent instruments pictured and described, we do not observe that of Geo. R. Fowler with the platinum needle which never rusts, and the solid piston which does not need to be soaked up, which has occupied a place in our pocket alongside the thermometer and pencil for the past two years, and without either of which we could do as well.

Our remarks on Shreiber's General Orthopædics will equally apply to this. We wish it had been given us as a separate treatise instead of being buried in a series of monographs.

COMPEND OF HUMAN PHYSIOLOGY, especially adapted for the Use of Medical Students. By Albert P. Brubaker, M.D. T. c. P. Blakiston, Son & Co.: Philadelphia, 1889.

This is one of the Blakiston's series of Quiz Compend, the popularity of which is shown by the fact that it has already reached the fifth edition, which is revised and enlarged with the addition of new illustrations and a table of physiological contents. While many changes that have been made will be found distributed throughout the body of the work, the principal additions besides those already noticed will be found in the sections pertaining to the nervous system.

The medical student preparing for his examination will find this a compact and convenient arrangement of the fundamental facts of human physiology.

CORRESPONDENCE.

To the Editorial Committee.

On page 142 of the March number of the Journal, in the course of the discussion of Dr. Wight's paper on "The Treatment of House-Maid's Knee," Dr. Wackerhagen is reported inquiring "if Dr. Wight thinks the deep incision is necessary." This should read *deep suture*, instead of *deep incision*.

In the same paper, on page 144, "*one to five thousand* bichloride solution" should read *one to five hundred*.

Very truly,

H. W. RAND, M.D.,
Sec. Brooklyn Surgical Society.

MISCELLANEOUS.

BROOKLYN VITAL STATISTICS FOR DECEMBER, 1889.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated Jan. 1, 1890, 852,467	The number of births reported was	1292
In the month of Dec. there were 1580 deaths, the rate of mortality being 26.47 per 1000 of population.	The number of marriages reported was	507
	The number of still-births reported was	126

The mortality by classes and by certain of the more important diseases was as follows :

Causes :

1. Zymotic	269	Malarial Diseases	11
2. Constitutional	297	Diarrhœal Diseases (all ages)	11
3. Local	842	“ “ (under 5 years) ..	4
4. Developmental	123	Phthisis	186
5. Violence	49	Bronchitis	103
Measles	3	Pneumonia	220
Croup	29	All Respiratory	350
Diphtheria	129	Bright's Diseases	35
Scarlet Fever	11	Puerperal Diseases	21
Typhoid Fever	18	Old Age	33
Whooping Cough	14	Suicide	6

Reported Cases :

Diphtheria	315	Measles	64
Scarlet Fever	122	Typhoid Fever	67

Deaths by sex, color, and social condition, were as follows.

Male	837	Native	1030
Female	743	Foreign	550
White	1552	Married	521
Colored	28	Single	830

Widows, Widowers, and not stated . 229

Still-births, excluded from list of deaths, were as follows:

Males	66	Total	126
Females	60		

Deaths in public institutions	145	Homicides	6
Deaths in tenement houses	429	Suicides	1
Inquest cases	132	Legal Execution	

Age Periods:

Deaths under 1 year	276	Total deaths, 5 to 20	144
“ “ 5 years	228	“ “ 20 to 40	314
Total deaths under 5	504	“ “ 40 to 60	325
		“ “ 60 and upwards	293

Certain foreign and American cities show the following death-rates for the month of December :

Brooklyn	22.05	Vienna	24.85
New York	24.26	Paris	24.23
Philadelphia	19.11	London	18.82
Berlin	20.80	Glasgow	24.60
Dublin			28.22

BROOKLYN VITAL STATISTICS FOR JANUARY, 1890.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated Jan. 1, '90, 852,467	The number of Births reported was.....	1254
In the month of January there were 2151 Deaths, the rate of mortality being 29.71 per 1000 of population.	The number of Marriages reported was.....	424
	The number of Still-births reported was.....	128

The Mortality, by classes and by certain of the more important diseases, was as follows:

Causes:

1. Zymotic.....	298	Malarial Diseases	16
2. Constitutional.....	389	Diarrhœal Diseases (all ages)....	5
3. Local.....	1278	“ (under 5 years).....	2
4. Developmental.....	146	Phthisis.....	283
5. Violence.....	40	Bronchitis	147
Measles	6	Pneumonia	556
Croup.....	32	All Respiratory	745
Diphtheria.....	101	Bright's Diseases.....	40
Scarlet Fever.....	14	Puerperal Diseases.....	22
Typhoid Fever.....	14	Old Age.....	51
Whooping Cough.....	8	Suicide	6
Influenza			74

Reported Cases:

Diphtheria	253	Measles	77
Scarlet Fever.....	154	Typhoid Fever.....	60

Deaths, by sex, color, and social condition, were as follows:

Male.....	1056	Native.....	1338
Female.....	1095	Foreign.....	813
White	2122	Married.....	785
Colored.....	29	Single.....	1009
Widows, Widowers and not stated.....	359		

Still-births, excluded from list of deaths, were as follows:

Males	68	} Total	128
Females.....	60		
Deaths in public institutions.....	148	Homicides.....	
Deaths in tenement houses.....	674	Suicides.....	6
Inquest cases.....			170

Age Periods:

Deaths under 1 year	326	Total deaths, 5 to 20.....	157
“ “ 5 years.....	264	“ “ 20 to 40.....	494
Total deaths under 5.....	590	“ “ 40 to 60.....	483
		“ “ 60 and upwards.....	427

Certain foreign and American cities show the following death-rates for the month of January 1890:

Brooklyn.....	29.71	Vienna.....	31.42
New York	38.70	Paris	48.39
Philadelphia	29.98	London	24.40
Berlin.....	31.97	Glasgow.....	31.15
Dublin.....			33.95

BROOKLYN VITAL STATISTICS FOR FEBRUARY, 1890.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated Jan. 1, 1890	852,467	The number of Births reported was	1088
In the month of Feb'y there were	1428	The number of marriages reported was	394
Deaths, the rate of mortality being	21.84 per 1000 of population.	The number of Still-births reported was	102

The mortality by classes and by certain of the more important diseases were as follows:

<i>Causes:</i>			
1. Zymotic.....	243	Malarial Diseases.....	12
2. Constitutional.....	291	Diarrhœal Diseases(all ages).....	7
3. Local.....	759	“ “ (under 5 years).....	1
4. Developmental.....	110	Phthisis.....	194
5. Violence.....	25	Bronchitis.....	98
Measles.....	2	Pneumonia.....	232
Croup.....	45	All Respiratory.....	361
Diphtheria.....	94	Bright's Diseases.....	31
Scarlet Fever.....	26	Puerperal Diseases.....	17
Typhoid Fever.....	8	Old Age.....	29
Whooping Cough.....	9	Suicide.....	1
Influenza.....	14		

Reported Cases:

Diphtheria.....	239	Measles.....	84
Scarlet Fever.....	190	Typhoid Fever.....	32

Deaths by sex, color, and social condit on, were as follows:

Male.....	777	Native.....	949
Female.....	651	Foreign.....	479
White.....	1406	Married.....	443
Colored.....	22	Single.....	769
Widows, Widowers, and not stated.....	216		

Still-births, excluded from list of deaths, were as follows:

Males.....	52	{	Total.....	102
Females.....	50			
Deaths in public institutions.....	128		Homicides.....	2
Deaths in tenement houses.....	404		Suicides.....	1
Inquest cases.....	94			

Age Periods:

Deaths under 1 year.....	256	Total deaths, 5 to 20.....	132
“ “ 5 years.....	233	“ “ 20 to 40.....	276
Total deaths under 5 years.....	489	“ “ 40 to 60.....	269
		“ “ 60 and upwards.....	262

Certain foreign and American cities show the following death-rate for the month of February:

Brooklyn.....	21.84	Vienna.....	31.80
New York.....	24.52	Paris.....	27.21
Philadelphia.....	23.75	London.....	26.32
Dublin.....	44.75	Glasgow.....	25.85

THE BROOKLYN MEDICAL JOURNAL

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ORIGINAL ARTICLES.

NITROUS OXIDE AS AN ANÆSTHETIC.

BY GEORGE W. BRUSH, M.D.

In the month of December, 1876, I read a paper before the Kings County Medical Society, entitled "Nitrous Oxide in Minor Surgery," which was published in the "Proceedings" of the society for that month. I therein predicted for this anæsthetic a wider field in the future than the one to which it was chiefly assigned at that time, and expressed my belief that some day it would take its place in general surgery as one of the important anæsthetics. The reasons for this were that investigation had shown it to be a safe and pleasant agent, quickly administered, from which the patient rapidly recovered without shock and, usually, without nausea or other disagreeable symptoms connected with the administration of ether and chloroform. Statistics at that time were overwhelmingly in its favor for all the shorter operations in general and dental surgery, and this continues. The record shows seven deaths from nitrous oxide (three of these, however, are indirectly attributed to it) in over one million administrations, and this probably does not include half the cases that have been anæsthetized with it, if we include those for dental operations.

Comparative statistics show a ratio of one death in about two hundred administrations of chloroform, one in about five hundred of ether, and of nitrous oxide one in ten thousand.

If it can be shown that the safer agent can be used in most of the operations where an anæsthetic is required, we shall have little excuse for resorting to the more dangerous ones, even though a slight additional expense is involved in the use of the safer anæsthetic. My apology for presenting a paper on the subject of anæsthetics, when so much has been written about them before, is that I hope to show that nitrous oxide is the safest and best anæsthetic for most of the operations in surgery, and also to offer my conclusions as to its physiological action, amendatory to those offered in my former paper.

At the time of the writing of that paper my experience in its use, in the more important operations of surgery, had been limited to a few cases. Since then it has been quite extensive, the cases including almost all the operations in general surgery, many of them oft repeated; and I append the details of a few of these cases confirmatory of my position. I pass by the more simple cases, such as operations for the dilatation of the sphincter ani, lancing of felons, etc., and take some of those more serious in character.

A few days after presenting my paper, in 1876, the late Dr. W. H. Giberson called upon me and asked me to go with him to the City Hospital, of which he was visiting surgeon, and make a test of nitrous oxide in some of his cases there :

CASE No. 1.—An operation for injecting a hydrocele. Anæsthesia maintained about eight minutes.

CASE No. 2.—An operation for phimosis. Anæsthesia maintained ten minutes.

CASE No. 3.—Dr. Giberson then said there was a sailor in the hospital with a compound, comminuted fracture of the arm, the result of a fall on shipboard. The physical condition of the man was such that he feared the shock of the administration of ether or chloroform, and asked if I would be willing to give him nitrous oxide. I consented, and the patient was successfully anæsthetized, the arm removed, and stump dressed; the time occupied being about thirty-five minutes. The patient was removed to his bed, recovered consciousness promptly, and asked for something to eat. He made a rapid recovery, without an unfavorable symptom.

CASE No. 4.—That of a prominent professional gentleman of this city, who had a cancerous tumor removed from the lower lip. Anæsthesia maintained for one hour and twenty minutes, the patient manifesting no sign of shock, recovering promptly on the removal of the inhaler. In this case there was difficulty in accommodating myself to the operator (the late Dr. J. C. Hutchison), but by plugging the mouth and pharynx with cotton, the patient breathing through the nose, I was

enabled to adjust my inhaler so as to uncover the lower lip and administer the anæsthetic.

CASE No. 5.—Another of Dr. Hutchison's cases. Lithotrity was performed, and the *débris* removed by Bigelow's apparatus. Anæsthesia was maintained for one hour. This was not quite as satisfactory a case as the others, the patient being more or less rigid at times, but no more inconvenience was encountered than is often met with in ether narcosis. A few months afterward lithotomy was performed for the same patient, nitrous oxide being again used, as the patient and operator both preferred it. The same tendency to rigidity was encountered as on the former occasion, and, at my suggestion, ether was substituted for a few minutes, when relaxation ensued, and nitrous-oxide anæsthesia was resumed, and continued satisfactorily to the end of the operation—over a half hour.

CASE No. 6.—This was also a case of lithotomy, operated upon by Prof. J. C. Gouley, of New York city. Anæsthesia was easily maintained for over half an hour, the patient recovering within three minutes after removal of the inhaler, making a joking remark.

None of these cases manifested any symptoms of nausea.

CASE No. 7.—Amputation of the breast. Anæsthesia maintained for twenty-five minutes. No unfavorable symptoms; neither nausea nor depression. Recovery prompt.

CASE No. 8.—Amputation of breast. Anæsthesia maintained for over half an hour. There was a marked bronchitis existing, which was at first somewhat troublesome, but did not materially interfere with the maintenance of anæsthesia satisfactorily.

Many other cases could be cited, but these are sufficient to show the feasibility of nitrous-oxide anæsthesia for prolonged operations, by the method adopted by the writer, details of which will be given later in this paper, when considering the physiological action of the anæsthetic.

I will cite only one other case, a recent one, referred to by the operator, Dr. Geo. R. Fowler, in his paper, published in the March number of *THE BROOKLYN MEDICAL JOURNAL*. The details are mainly given by Dr. Fowler. Low tracheotomy had been performed some days before, and when I saw the patient it was to determine how the anæsthetic could best be administered through the tracheotomy-tube, there being no other way. I decided to have a special apparatus made connecting with my inhaler, and, with the consent of Dr. Fowler, the inner cannula was removed and taken to G. Tiemann & Co., of New York city, and, a thread being cut in this, a connection was made by means of flexible rubber tubing attached to a graduated ring, upon which a thread was also cut so as to admit of its being screwed into the cannula.

When all was completed, the aperture was so small that it seemed doubtful whether the patient could get enough air through it to sustain life. I therefore practised breathing with it until satisfied that the patient would be safe from asphyxia.

When the patient came into the room her pulse was 112, but dropped to 90 as soon as anæsthesia was established, and remained so throughout the operation, which was that of laryngectomy, and lasted for one hour and forty-five minutes. The anæsthesia was uniform during the whole time and the recovery prompt, as Dr. Fowler has stated, without shock or any unpleasant symptom that could be attributed to the anæsthetic.

Perhaps the writer has not done his whole duty in not publishing his former experiences with this agent, as many of the profession have expressed surprise that it could be used for prolonged operations; but, while investigating the question of its physiological action, it seemed as well to wait until something satisfactory along this line could be determined, and it is only recently that he has been able to do this, none of the views of other writers according with experience.

My early investigations with nitrous oxide were connected with its administration for dental operations, but after entering upon the practice of medicine and surgery I pursued them carefully, as time would permit, along the lines of general surgery and the prolonged operations therein, and in the last fourteen years have administered it in hundreds of cases, the cases enumerated being a few culled from this experience. There has been, here and there, an unsatisfactory case, and in these ether or chloroform has been resorted to. The apparatus which one is obliged to use is somewhat cumbersome, but the advantages gained compensate for this. Nausea sometimes occurs, but it is rare, and when it does manifest itself is not as persistent as with the other anæsthetics.

Its successful administration for prolonged operations requires some skill and experience, or the patient may speedily recover from its effects in the midst of the operation, or, as happened in one of my first cases, too little atmospheric air was admitted, and when the operation was completed I had for a moment some concern for his safety; but happily he recovered rapidly.

There has been so much written upon the subject of the physiological action of this anæsthetic, and the views of the writers are so widely divergent, that it is with some hesitation that I approach this part of the subject with a theory of my own, and my conclusions will be subject to any modifications which the completion of a series of experiments, which were begun over a year ago, may demand. A few preliminary experiments were made at the Johns Hopkins University,

through the courtesy of Prof. Martin and my friend, Prof. Geo. T. Kemp, an alumnus of that institution, and now of the Hoagland Laboratory, of this city, and with whom these experiments are being continued. I hoped to have completed them before presenting this paper, but delays in obtaining apparatus from abroad suitable for the work have rendered this impossible, and I have concluded to give to the profession these results, leaving a fuller discussion until the completion of our researches.

Before giving the results it would seem proper to present some of the views advanced by other writers. Dr. Watson says of nitrous-oxide gas: "It furnishes the simplest case of the circulation of unoxxygenated blood through the arteries, and therefore through the capillaries of the brain. It is the privation of oxygen, and not the presence or increase of carbonic acid, which is suspensive of consciousness."

The "International Cyclopædia of Surgery," vol. i., p. 423, says: "Nitrous oxide, in spite of its asphyxiating properties, is the safest of all anæsthetics for brief operations. This gas has been administered more than a million times with but seven deaths."

Sir Humphrey Davy, after exhaustive investigations, as published in 1839, entitled "Researches on Nitrous Oxide," says, in his conclusions: "It appears that the immediate effects of nitrous oxide are analogous to those of diffusible stimuli; both increase the force of the circulation, produce pleasurable feeling, alter the conditions of the organs of sensation, and, in their most extensive action, destroy life." He then goes on to state that the nitrous oxide is probably decomposed in the system, the oxygen producing superoxygenation, the nitrogen remaining and raising the percentage of nitrogen above the normal. This, however, has been disproved by a number of later observances.

Dr. E. P. Howland, of Washington, D. C., in a paper read before the Biological Section of the American Association for the Advancement of Science, August, 1883, says: "I have administered pure nitrous oxide in over three hundred cases in the city of Washington; the longest time a patient was unconscious was thirty-five minutes." He further says: "If air, or oxygen, is mixed with nitrous oxide in sufficient quantity to prevent asphyxia, it will *not* produce anæsthesia."

M. Paul Bert, of Paris, and one German writer have acted on the theory that more oxygen should be supplied to the blood than in common respiration, and Bert has constructed a tight cage, large enough to admit patient and those required for the operation; here, under a pressure of two atmospheres, he administers nitrous oxide mixed with oxygen, and obtains satisfactory results.

The German writer supplies oxygen from a separate cylinder, connecting with his apparatus, and claims equally good results, without the cumbersome cage.

It will at once be seen how these various writers differ in their conclusions.

In experimenting upon animals, I have found that if *pure* nitrous oxide was administered, within two or three minutes the respirations become labored, and the register of the kymograph indicated impending dissolution, and, if the inhalations were continued, respiration ceased. In two cases, when the animal was not connected with the kymograph, inhalation was continued to the point of cessation of respiration, but the action of the heart still continued. Artificial respiration was then induced, and in less than three minutes the animals (dogs) were playing about the room. In one case there seemed to be a slight inco-ordination of the movements of the limbs and a tendency to stagger for three or four minutes.

The details of one of these experiments may be of interest to some readers: At 11 29' A. M. gave to a small dog equal parts nitrous oxide and oxygen. 11 31', animal lethargic. 11 32' gave two-thirds nitrous oxide and one-third oxygen. 11 33', active; sensation present. 11 34', all nitrous oxide given. 11 34 30'', struggles; reflexes present. 11 36', find that he gets some air; re-arrange apparatus to prevent this. 11 40', give all nitrous oxide. 11 41', reflexes blunted, but present. 11 42', fully anæsthetized, respirations labored. 11 42' 15'', one-half nitrous oxide and one-half oxygen given; respirations suddenly shallow. 11 44', reflexes present to touch and threat; two-thirds nitrous oxide and one-third oxygen given. 11 46', reflexes present to threat. 11 47', struggles. 11 48', reflexes blunted. 11 50', all nitrous oxide given again; struggles. 11 51', reflexes barely present. 11 52', respirations ceased, but heart-beats continue; artificial respiration induced. 11 53', breathes naturally. 11 53' 30'', stands on his feet, but drops over. 11 55', still a little unsteady. 11 57', trots about the room and answers to call by wagging tail; somewhat lethargic. 12 M., entirely normal.

This additional experiment has been completed since the above was written, and is so instructive that I insert it: A small dog was attached to the kymograph in such a way as to register, by a delicate apparatus, the heart-beats, respirations, and number of seconds of time. The animal had been under chloroform for some time, and, during the adjusting of some apparatus, the valve of my inhaler was so turned that the animal breathed pure chloroform for about a half minute, when I noticed that respiration had ceased. Artificial respiration was immediately induced, and the animal resuscitated, though suffering some-

what from shock. All nitrous oxide was now given for four minutes, when respiration again ceased; but the heart continued its beating for eight minutes, the beats gradually diminishing in force until the register recorded stoppage of the heart.

In the first experiment it will be noticed that but two minutes elapsed from the time all nitrous oxide was administered before respiration ceased. This was sooner than usual. It will also be noticed that the heart did not cease to act, and this accords with other experiments, and warns us that the danger comes first through disturbances of respiration.

This experiment indicates that the admixture of oxygen and nitrous oxide, in the proportion of two parts of the former to one of the latter, does not produce profound anæsthesia.

I have made repeated experiments upon myself and also upon other persons, as well as upon animals, and have demonstrated beyond question that partial anæsthesia can be maintained with a proper proportion of nitrous oxide and atmospheric air combined, anæsthesia becoming more and more profound as the quantity of air is diminished.

Of course, I could not demonstrate and maintain a condition of complete and prolonged anæsthesia upon myself; but, having carried it to a certain point, I became convinced that there could be a proper equilibrium established as to the quantity of atmospheric air required in combination with nitrous oxide, and thus anæsthesia be maintained with safety for the necessary length of time, in an ordinary room or ward in a hospital, without depression, either in the pulse or respirations, if properly administered. "But why," says Dr. Fowler in his paper, "this peculiar condition? If it was not the result of the accumulation of carbon di-oxide in the blood, what was it?"

Neither the views of other writers, as quoted above, nor those of any that I have been able to find answer this question as fully as could be desired; and, having given those of a number of the best authorities, I venture to give my own, without comment upon those of others, leaving the profession to decide which is correct, well knowing that time will reveal the truth, and trusting to the conclusion of the series of experiments alluded to for the proof of the truth or falsity of my positions.

The Giver of all good so combined the two chemical elements, nitrogen and oxygen, in the atmosphere, that it best supplies the needs of the creatures he has made. If we go into the higher altitudes, where the air is rarified, respirations are increased, so that the necessary amount of oxygen may be supplied. If we descend to a point where the air is more dense, respirations are diminished, as more oxygen is supplied with each respiration, and only a given amount is needed for

the ordinary processes of life. The more quiet we remain the less the waste of tissue, and hence the less the demand for the renewing forces.

Nitrous oxide enters the circulation, and acts as an anæsthetic agent. It is not suitable for continuous inhalation for a prolonged period in its *pure* state, because under the conditions existing in the blood the tissues are not able to decompose it and appropriate the oxygen. By its anæsthetic action, however, it modifies the processes of waste or combustion of the tissues of the body, so that less oxygen is required than in the ordinary processes of life. To state a well-known fact, each living being requires a given amount of oxygen to sustain life, some more, some less, depending upon the size and activity of such being; each act and movement of the body necessitating a certain amount of tissue-combustion, in which this oxygen is used, and the resultant carbon di-oxide given off. Now, if we can suppose a condition in which tissue-combustion is partially arrested, the amount of oxygen required would be lessened by so much. This is probably what really occurs in nitrous-oxide anæsthesia. The gas enters the circulation, produces anæsthesia, and the processes of waste are diminished; hence the processes of repair are not called for, neither is there depression nor exhaustion: on the contrary, there is, in many cases, a feeling of exhilaration on recovering consciousness.

The condition of nitrous-oxide anæsthesia is probably independent of partial asphyxia, most writers to the contrary notwithstanding. The cyanotic appearance is not due to carbonic di-oxide poisoning, but to the diminished amount of oxygen in the blood. The system, however, does not suffer from this diminished supply of oxygen, for its chemical activity is lessened by the nitrous oxide.

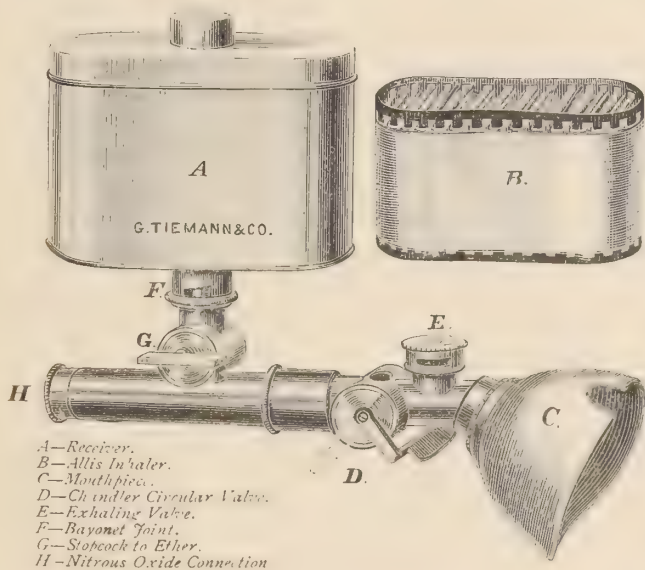
This is my answer to the question asked by Dr. Fowler in his paper, as fully as I can make it at present.

If all nitrous oxide is inhaled, as soon as the oxygen remaining in the lungs and bronchial tubes is appropriated by the tissues, all the processes of life cease; as no oxygen is obtainable from the nitrous oxide, it must be supplied from some other source. The exhaling-valve carries off whatever carbon di-oxide may accumulate, the suspension of the respirations is not therefore due to the effect of this agent. It is the lack of something, and that something is the life-sustaining necessity, oxygen. Without it life must cease, just as an engine stops when the fire is withdrawn from the furnace as soon as the accumulated steam is expended.

Those who claim to administer nitrous oxide in its pure state for prolonged anæsthesia doubtless have had an imperfect apparatus, so that some air was admitted, or the struggles of the patient so disarranged the inhaler, that a fatal issue was thus averted.

For the shorter operations, such as lancing of felons, extracting teeth, etc., it can be administered to the point of complete anæsthesia pure, the inhaler being removed as soon as this condition is reached.

If these conclusions be correct, it will be seen at once what a simple process we have before us. The bulky cage of Bert is not required, nor a separate cylinder of oxygen. All that is needed for the proper administration of this anæsthetic is a carefully constructed inhaler, so as to supply a sufficient amount of air with the nitrous oxide, and no more; and on the proper manipulation of this inhaler will depend the success or failure of those who undertake its administration. The inhaler used by the writer is a combination of his own ideas, joined to those of others well known to the profession. It is adapted to the administration of nitrous oxide, ether, or chloroform. The mouth-piece and valve are those in use in the Codman and Shurtliff inhaler.



Into the metal tubular extension of this are two stop-cocks, one closing the nitrous-oxide chamber and the other fixed on an extension at right angles, upon which there is an attachment with a bayonet-joint for the ether- or chloroform-receiver. This receiver is large enough to contain an Allis inhaler, modified in size, but large enough to give the requisite amount of evaporating surface. The top of this can is movable, for the insertion of the Allis inhaler. Into the bottom of the receiver a flat sponge is placed, to absorb any surplus ether or chloroform.

Between the inhaling-valve and the exhaling-valve there is a circular valve arranged so that the administrator can begin by giving all air, gradually turning the valve until the required amount of anæsthetic is being given. All the air required can be supplied from this source, and the unpleasant strangling process in the usual method of giving ether is obviated, and sudden shock from a too rapid administration of chloroform is also avoided. Another valuable consideration is the cleanliness of the method, no anæsthetic coming in contact with the face in liquid form.

With nitrous oxide my custom is to give a few whiffs of it pure, and then adjust the sliding-valve according to the needs of the patient; this, I have found, as before stated, will be from one-quarter to one-fifth atmospheric air, a little more or less. It is absolutely necessary that the administrator give his undivided attention to his work. In nitrous-oxide anæsthesia he should observe carefully the respirations of his patient; as long as these are continued he need have no concern. The pulse is the last to give way.

It remains for me to add a few words upon those cases not adapted to nitrous-oxide anæsthesia. I have found a few that could not be anæsthetized with it at all. In one case I gave twenty five gallons of the gas, and then the patient was just as conscious as when he began his inhalation.

Occasionally there will be a case where the admixture of the required amount of air for safety will dissipate the anæsthetic condition; and, again, especially those of an alcoholic habit will become boisterous or rigid, so that it will be impossible to proceed. These cases are, however, the rare exception; but, as they do occur, mention should be made of them, and it is well to be prepared for them, and substitute ether or chloroform if required. I therefore make it a rule always to carry with me to a case these three anæsthetics, viz., nitrous oxide, ether, and chloroform, and use them in the order named. In order that I might the more readily substitute the one for the other, I had constructed the inhaling-apparatus herein described. It can be made with or without the nitrous-oxide attachment, and is convenient, cleanly, and safe.

While there is occasionally a case where nitrous oxide is unsuitable or ineffective, there is a still larger class of cases where, owing to the weak and debilitated condition of the patient, ether or chloroform add materially to the probability of a fatal issue; and it is especially in this class of cases that nitrous oxide would supply a want long felt in the profession.

DISEASE GERMS AND DISINFECTANTS.

BY JOHN G. JOHNSON, M.D.

Read before the Medical Society of the County of Kings, December 17, 1889.

[CONTINUED.]

Next in frequency to cancer of the stomach comes cancer of those portions of the intestine where its contents are obstructed, especially the rectum. When you consider that persons of sedentary habits are usually constipated, and that straining at stool easily causes a fissure of the rectum, opening up the absorbents for the cancer-germ to travel along the absorbents to the neighboring organs, it is difficult to understand why cancer of the uterus is so common among our wealthy women who eat much rare meat and take but little exercise.

Next to cancer of the rectum comes cancer of the bends of the intestines, where the contents are impeded in their progress; next comes cancer of the throat and mouth. There are more cancers of the throat than all external cancers put together.

In 1887, there died in the City of New York 780 persons of cancer; enough to make a good sized town.

Dr. Tracy, Registrar of the New York Health Board, in his report shows that in 1888 there died of cancer, in the City of New York, 870 persons, of which number 284 were men and 586 were women, or nearly twice as many women as men.

In Brooklyn, 111 males and 214 females died in 1888 of cancer. Nearly twice as many women as men.

In Brooklyn the death-rate from cancer was $3\frac{7}{8}$ to the 10,000 population, while in New York 5.5 to the 10,000 of the population.

Brooklyn is composed mostly of the middle classes of society, where everybody works. New York has the extreme rich and extremely poor. Is there any probability from these figures of more luxury, more cancer.

Compare this with the fact that in the Highlands of Scotland, where the peasantry live on oatmeal porridge, cancer is almost unknown.

There is another animal disease that almost every physician has introduced into the human system, and yet no one can tell what it is or how it acts. I mean vaccine. Probably no one subject has been more studied than the fluid that comes from cow-pock. No one has found a germ or a germinating principle there, yet everybody knows that if you abrade the surface of the body anywhere, and plant this

vaccine upon it, it will grow. You can dry it on a quill, and keep that quill a week. Then if you moisten that quill and rub it on to the abrasion on the arm of the unvaccinated child, you introduce the same disease into the child. Is it unreasonable to suppose that the cancer-cell, which has been shown to propagate a week after it has been removed from the animal, may take a foothold on a raw spot in the stomach or intestine in the same way? Recall Strumpfell's statement of cancer of the stomach. They "take their origin on an old ulcer of the stomach as if they were planted on it. The cancer-growth forms around this ulcer as a nucleus. The great bulk of the meat consumed in this city is slaughtered abroad, and only the marketable portions shipped to the city. Can any one tell from what he sees in the market what disease that animal may have had? Remember that the cancer-cell is migratory. Virchow says it is first local and then constitutional. Remember that 75 of all cancers are internal. In view of the alarming increase of cancer among our wealthy classes, can any one say that rare meat and blood gravy of an animal that is subject to cancer—if those cancer-cells are introduced alive into the human stomach—has nothing to do with this enormous increase of cancer in this community.

Great as has been the advance towards accurate knowledge in these diseases furnished by bacteriology, it has been surpassed by the information obtained in regard to diphtheria and scarlet fever, to which I invite your attention to-night.

It is very popular to talk of microbes. We hear the term in almost every one's mouth, and yet of the many thousands who use the word so glibly, how few know its meaning or derivation. You will seek for it in vain in any dictionary or its definition in any medical book. For a long time there was a dispute as to whether these disease germs were animal or vegetable, and the word microbe was adopted as a common term which every one could use. It comes from mikros, small, and bios, life. These "little lives," as microbes mean, was a term that every one could use, whether he believed these "little lives" were animal or vegetable. Webster's definition of an animal as having sensation and motion had to be abandoned, because it was shown that there were vegetables that had both sensation and motion. Finally, Pasteur compounded a fluid entirely of minerals, furnishing C.H.O.N. in form, easily obtainable, and it was found that these microbes could subsist on this. A new distinction was made between animal and vegetable life—that is, that an animal must have some other animal or vegetable life to subsist on; while a vegetable can live on the mineral world. As it was found that these disease germs would subsist on either animal, vegetable, or mineral world, wherever they could easily obtain

C.H.O.N., all bacteriologists now class them as vegetable organisms.

Of all germ diseases probably none have been fraught with more terror and less been known about them than diphtheria and scarlet fever. Diphtheria is as old as civilization. Homer mentions it as attacking the armies of Ulysses. Hippocrates, the father of medicine, Celsus, Sydenham and others, from the dawn of medical history, have described it under many different names. In the Middle Ages it was known as the *Malum Egypticum*. The earliest medical records of this country describe it as the putrid sore throat of New England. Yet during all these ages that it has prevailed, no one has known its cause. Like the pestilence that walks in darkness, no one knows how it came or how to stop its ravages. Chemistry cannot detect these disease-germs. In water which stands the severest tests of chemical purity, typhoid bacilli have been found, enough to infect a whole village. No chemist with the finest reagents in his laboratory can show any difference in the pestilential air in the rice swamps around Tybee Light or the pure air from the top of Chimboraza Mountain. Chemistry can show no difference between an air laden with the yellow fever poison and the air you breathe. The microscope alone cannot tell disease-germs, because in every mouth, on every tongue, and on every portion of the skin, are multitudes of germs. Which of these germs are hurtful and which harmless the microscope cannot determine. An amusing instance of the mistakes made in relying on the microscope is seen in the fact that the Alumni Association of the Albany Medical College awarded their prize for the discovery of the cause of diphtheria to a microscopist who had found in the diphtheritic membrane and propagated an ordinary mold, which he named *mucor malignans*. It is not sufficient to find a germ in any disease-tissue and propagate it, to claim that it is the cause of that disease.

Four rules have been laid down by Koch and accepted by all bacteriologists :

- 1st. The micro-organism must be found in the blood, lymph, or diseased tissues of man or animal suffering or dead from the disease.
- 2d. The micro-organism must be isolated from every other organism and propagated outside the body in pure cultures.
- 3d. A pure cultivation when introduced into a healthy animal must produce the same disease.
- 4th. You must find the same organism in the inoculated animal.

In diphtheria, for a long time after the probability of its being a germ disease, the difficulty of proving it so was found from the number of different germs that could be propagated from the false membrane, and particularly from a micrococcus that was invariably found in the membrane and that propagate so rapidly as to overshadow the

rest Nearly twenty years ago Oertel announced this as the cause, and bacteriologists are yet found who maintain this micrococcus is the cause of diphtheria; but when the rigid rule of propagating this micrococcus in pure cultures and then inoculating an animal, it was found that this micrococcus would not produce diphtheria. What is now known as the Klebs-Loeffler bacillus has been shown to be the true cause of diphtheria. Loeffler not only isolated this bacillus, but after propagating this bacillus in pure cultures, produced the pseudo-membrane in pigeons, fowls and guinea pigs. Paralysis also followed as in human beings. When the bacillus of Loeffler is injected into the windpipe of the rabbit it produces diphtheritic croup. The Loeffler bacillus fills the bill. It produces the membrane, causes the diphtheritic croup, and finally the paralysis and death by failure of the heart's action.

The next point of interest is that diphtheria is first a local disease, and later on becomes a constitutional one. Observation has shown this for many years. For instance, a physician has a hangnail on his finger: he bites it off. In examining a child's throat, the child coughs, and the expectoration comes upon the raw spot and causes diphtheria of the finger.

A mother, attending her diphtheritic child, puts a blister on her chest, thinking she is going to have pneumonia. The raw surface becomes covered with the diphtheritic exudation, and she dies from it—no false membrane having formed in the mouth or throat. A mother with cracked nipples nurses her diphtheritic baby, and has diphtheria of the breast. A patient, in the wards of a hospital where there is diphtheria, has leeches applied, and the diphtheritic membrane forms on the leech-bites.

The enormous number of cases like the above, which have been authenticated, produced the conviction that diphtheria was at first a local disease. Since the germ of diphtheria has been discovered, inoculation-experiments have been so frequently shown that it is first local and afterward constitutional. It may be laid down as thoroughly established, that on whatever part of the body diphtheria starts, that is the focus of infection. From that part of the body the poison radiates through the body until, by a general blood-poisoning, it renders the organism incapable of life.

Why diphtheria should attack the tonsils and mucous membrane of the pharynx is easily understood. The germs of diphtheria dry up and float around in the air. As they are breathed in they lodge on the tongue. This furnishes the moisture necessary to revive them and the heat at which they most readily propagate. If physicians would only spend a few minutes every day in examining their own saliva, they

would be amazed at the bacteriological laboratories they carry around with them. I shall never forget my own feelings the first time I made such an examination of my own saliva stained with aniline dyes.

Prof. Sternberg had demonstrated that pneumonia was caused by a disease-germ. A valued friend of mine had an attack of pneumonia that looked as though it would be inevitably fatal. I had been up all night with him, and toward morning he began to expectorate. When I left the patient I took the expectoration to see if I could find the germ of pneumonia myself.

After making slide after slide of the sputa, I made a slide with the same care of my own saliva. Imagine my astonishment. There, on my own tongue, I found the germs of pneumonia. There I was carrying around with me the means for my own destruction, and not knowing it. A little more exhaustion and a little more chilling of the body, and they would have done their deadly work. I could well understand then Prof. Sternberg's remark that the human tongue was the best incubator of these disease-germs, and Prof. Loomis' statement that pneumonia causes the death of nine-tenths of all people over sixty-five years of age.

The tongue is thus seen to be the incubator of these disease-germs; but they require an alkaline medium in which to propagate. The saliva is alkaline, and supplies that want.

Did you ever carefully dissect a tonsil? It is wonderfully fascinating work when you are pursuing such a study. On the surface of each tonsil there are from twelve to fifteen little orifices. These run into little crypts, or pockets, like an old-fashioned olive-oil flask. Surrounding these crypts are lymphoid cells; running from these cells to the deep-seated glands of the neck are the absorbents. Thence the absorbents continue their course till they empty into the subclavian vein, where their contents, mingling with the blood going back to the heart, distribute their poison through the system.

The tonsil is an absorbent gland. If you ever have the good fortune to get the tonsil of a patient that has died of diphtheria, and make a careful dissection of it, you will find these crypts packed full of the diphtheritic germs. If the Almighty had framed our bodies especially as homes for these pests, what improvement could he have made on his present plan? He gives to these pests the power to live wherever filth is found. Winter's cold does not destroy them. They float around in the air, are breathed in and lodge on the tongue, with its heat and moisture to revive them. The saliva furnishes the alkaline medium they require to propagate in, and washes them into these homes in the tonsils, where they receive warmth, moisture, and food at our expense and the absorbents, as royal highways, through which they send their poison to the citadel of life.

How does diphtheria kill? Statistics on an enormous scale show that ninety-one per cent. of all deaths from diphtheria are from exhaustion. The excrement of every animal is poisonous, and so it is with the excrement of these germs. It would seem as though the smaller the pathogenic germ the more virulent is its excrement. This excrement of the diphtheritic germ affects the human system much in the same way as snake-poison would. The excrement is a vegetable alkaloid. From these alkaloids being first discovered in dead bodies, they were called ptomaines, from *ptoma*, a dead body. Now, the diphtheritic germ excretes this ptomaine, no matter in what medium you propagate them. Pasteur has devised a porcelain filter, through which these germs cannot pass, but through which their ptomaines will pass.

They take their tubes of agar agar, or bouillon, or nutrient gelatine, or whatever they have propagated the diphtheritic germs in, and empty them into one of Pasteur's filters; then, by atmospheric pressure, the filtrate is forced through the filter, carrying with it the ptomaines, but not the germs. This is proved by inoculating other tubes with this filtrate. If any germs had gone through, they would propagate. The new tubes remain sterile. Drs. Roux and Versein, two of Pasteur's pupils, have then inoculated animals with this broth containing these ptomaines. Thirty-five cubic centimetres killed an animal every time in forty-eight hours. The animal would stretch itself out in the cage in a lifeless manner, and death finally results from a failure of the respiratory muscles. A very small quantity injected into a guinea-pig produces the death of the guinea-pig in thirty-six hours. The rabbit begins to breathe hard almost immediately on receiving the injection. The trachea seems obstructed; the glands of the neck swell, and death follows in a few hours. Cats are more instructive. On injecting them they lie down in their cage: if you prod them, they move along in a listless way; finally their hind legs become paralyzed, and they die from heart-failure and failure of the respiratory muscles.

All investigation shows that the diphtheritic germ does not invade the system beyond the tonsil, but there excretes its ptomaine, or snake-poison, to be carried by the absorbents through the system.

With these facts as to the life-history of these pests in our system, what is the common sense in regard to treatment? Is it not to kill the germ before it can kill you? How shall we do it? Here a knowledge of bacteriology becomes so valuable. It is found that a weak solution of corrosive sublimate will kill every known disease germ. Take the most malignant of all anthrax or malignant pustule. It invades the system so rapidly, and multiplies in every drop of the blood so fast, that death is inevitable; and yet bacteriologists, after having made a post-mortem of a dog killed by this poison, and having the table

smear with its blood after they are through their work, simply wash that bloody table off with a solution of corrosive sublimate, one grain, to two ounces of water, and, when the table is dry, resume their ordinary work at the table with perfect safety. In every bacteriological laboratory corrosive sublimate solution is kept in stock for every student to wash his hands with after he has finished working on disease-germs, to prevent contaminating himself; and this washing the hands with corrosive sublimate is as regularly attended to as his meals are.

With a germ so destructive of life as the diphtheritic germ, why should we try doubtful means when we have a sure one? The people are frightened by the name of corrosive sublimate, and so are many doctors who have not investigated the subject. The smallest amount of corrosive sublimate that has ever been known to destroy life is two grains. If the entire two-ounce bottle, containing a single grain that is used as a local application, were swallowed at once by the child, it would not injure the patient as much as a few hours' irresolution on the part of those in charge of the case does. The corrosive sublimate coagulates albumen: this point ought ever to be remembered, for the diphtheritic germ is not on the surface, but deep down in the membrane. As the soldier throws up a breastwork in front of him to protect himself from attack, so these germs cause this exudate, behind which they can safely continue their work. Physicians have often been disappointed in the use of corrosive sublimate, because they had applied it locally to these cases, where the membrane was thick, without success. In these cases the corrosive sublimate had made a thicker breastwork by coagulating the albumen, and had not reached the germ.

Remember also that the germs require an alkaline medium to grow in. By gargling with lemon-juice or honest cider-vinegar, one part to four of water, we have an acid condition unfavorable to the germs, and, by painting the membrane with the lemon-juice or vinegar, it shrivels up, and then the corrosive sublimate becomes efficient.

Is it not probable that the *tr. ferri perchloridi*, which for thirty years has had its hold on the confidence of the profession, and is probably more often prescribed to-day than any other remedy, has accomplished its work as much from its acid as from its tonic powers? I made extensive experiments with diphtheritic germs, growing them, and when I had flourishing crops I would squirt lemon-juice into my culture-tubes, and it would destroy them. Not once could I propagate from these acidulated germs.

As the tendency of the disease is to exhaustion, the patient should be put in bed from the very first, and kept there after all evidence in the throat has disappeared. You may have destroyed the germs, and

yet the ptomaines secreted may continue to be absorbed for some time afterward. During the whole time of treatment the throat should continue to be disinfected by frequent gargling with lemon-juice or vinegar, as mentioned, because the whole pharynx between the tonsils, and also the post-nasal pharynx, is so similar in its absorbent structure that it is called by anatomists the third tonsil. Diphtheria often invades this post-nasal space, where it cannot be seen or the danger recognized till a serious condition of things has been created.

If diphtheritic croup and true croup are the same, as many of our bacteriologists assert, then the slacking of quick-lime under a tent gives results unsurpassed. I have had two cases of diphtheritic croup since I saw this statement, and both recovered. I used a barrel of lime a day for a week in one case. Both were freely sustained during the whole time of inhaling the vapor of lime.

To sum up :

Diphtheria is produced by a disease-germ, that invades the tonsil by preference. This germ secretes a poison similar in its effects on the human system to snake-poison. This poison destroys life by overwhelming the nervous system. That corrosive sublimate is a certain germicide, and should be applied locally : kill the germ before it kills your patient. As the tendency is to death by exhaustion, the patient should be kept in bed from the first and freely stimulated.

During the whole time the patient should gargle frequently with strong lemonade, or one part of vinegar to four of water, as also should those attending on him.

(To be continued.)

SLANDER OF PHYSICIANS.

THE CASE OF CRUIKSHANK *vs.* GORDON.

BY WALTER M. ROSEBAULT.

Among the cases decided by the Court of Appeals during the past month was that of Cruikshank against Gordon, an action which has attracted some attention among medical men.

The plaintiff, Dr. William J. Cruikshank, sued to recover damages for slanderous language uttered by the defendant to some of the doctor's patients. In substance, the language complained of was that the doctor had shown lack of skill and knowledge in the treatment of one of the defendant's children. To use the defendant's own language, "the doctor had treated the child for malaria, while it had another

and entirely different disease," and "he nearly killed the child," and "would have killed it, if another doctor had not been called in." These remarks he accompanied by reflections upon the plaintiff's general competency as a physician, as well as by criticisms of his treatment of particular patients, the defendant, although once a confectioner by occupation, appearing to have had an opinion that he was a good deal of a doctor himself.

For the luxury of indulging in these observations, a jury in the Supreme Court rendered a verdict against the defendant for \$1,600; and this verdict after successive appeals to the General Term of the Court and to the Court of Appeals, has been sustained.

Some circumstance of special aggravation were shown on the trial of the action; but taking even that fact into consideration, the verdict was a very substantial vindication of the right of a physician to be protected against unfounded reflections upon his professional character and skill, and showed that even the average petit jury will punish such defamation in a proper case, although we might expect its natural disposition to be adverse to the professional man and in favor of the layman.

Among the legal questions involved in the case, there was one which will probably be appreciated by medical men fully as much as by those versed in the law. The plaintiff came into Court without alleging, and probably without being able to prove, that he had sustained actual damage by reason of anything the defendant had said. Every one of his patients to whom the defendant had addressed defamatory words, appeared in Court to testify on the plaintiff's behalf; and none were shown to have lost confidence in him as a physician. So far as related to that part of the language uttered by the defendant which denied the plaintiff's competency as a physician in general, such evidence of actual damage was clearly not required, the rule being well settled that when a man is falsely said to be incompetent in his vocation, whatever that may be, the law presumes him to be necessarily damaged without proof; the mechanic standing in this respect on the same footing with the members of a learned profession. In some instances, as in the present case, it might be possible to show that this presumption was incorrect in fact; but such proof would not be received.

It has, however, been a question in the minds of some judges whether the same presumption exists in respect to a false accusation of ignorance or incompetency in one particular instance. It was decided in one case in the Supreme Court in this State (*Foote vs. Brown*) and in an old case in England (*Poe vs. Mendford*) that in respect to such a slander, this presumption does not apply, and that a plaintiff must

prove actual damage to sustain an action upon it, and these decisions were cited with approval in Connecticut in the case of *Camp vs. Martin*, although the Court was there to some extent restrained and embarrassed by an earlier decision in the same State, in which a contrary view was asserted.

One reason for the distinction between a false charge of professional incompetency in general and one of a lack of skill in a particular case, was, in these decisions, stated to be that to apply such a presumption to a particular case would operate as an unreasonable and impolitic restraint upon freedom of speech, and it was said that no precedent or authority could be found for doing so. The doubt was also expressed whether such a slander would be liable to cause injury to the same extent as a charge of general incompetency in a trade or profession.

Later decisions in the Supreme Court of this State have emphatically dissented from the views expressed in the cases referred to, and have condemned those cases as expressing unsound law. In the case of *Secor vs. Harris*, the Court sustained an action based upon the following language: "Dr. S. killed my children; he gave them teaspoonfuls of calomel and they died. Dr. S. gave them teaspoonfuls of calomel, and it killed them; they died right off the same day." And it was held unnecessary to prove that actual damage had resulted from this language. And in the case of *Lynde vs. Johnson*, a very recent decision, the Supreme Court of this State said: "Words spoken of a physician's treatment of a particular case may just as effectually injure his professional character and standing as when spoken of him generally in that respect. And when their natural and plain import and effect are that they impute to him general professional ignorance or want of skill, the fact that they are spoken in reference to the treatment of a particular case, does not render them less actionable, as matter of law, than if the words had been uttered in respect to the general professional character of the physician." And so in the earlier Connecticut case of *Sumner vs. Utley*, which the later case of *Camp vs. Martin* hardly approves of, Chief Justice Hosmer said: "As a general principle, it can never be admitted that the practice of a physician or surgeon in a particular case may be calumniated with impunity unless special damage is shown. By confining the slanders to particulars, a man may thus be ruined in detail. A calumniator might follow the plaintiff, and begin by falsely ascribing to a physician the death of three persons by mismanagement, and then the mistaking of an artery for a vein, and thus might proceed to misrepresent every single case of his practice, until his reputation should be blasted beyond remedy. Instead of murdering character at one stroke, the victim would be cut

successively in pieces, and the only difference would consist in the manner of effecting the same result."

At the same time, this only leaves a conflict of opinion between Courts of equal rank and authority. This particular question has never, until the present case, come before the Court of last resort in this State for consideration, and it would probably have been both interesting and useful, if in this case the question had been fully considered, and finally disposed of by an explicit and controlling decision.

The materiality of the question in the present case becomes apparent in connection with one of the expressions which the defendant was shown to have uttered. "He treated my child for malaria, while it had another and entirely different disease. He nearly killed it, and would have killed it, if I had not called in another physician." Here was a false charge of ignorance in respect to a particular case, and the question whether this language alone would have sufficed to sustain the action without proof of actual damage, was raised in the case in such a manner that the Court of Appeals could have thoroughly considered and explicitly decided it had there been a desire to do so. But the Court passed over the question by holding that it was unnecessary to consider it in view of the other language which the defendant had uttered, thus leaving the question for possible consideration in some case that may come before the Court in the future.

That this is a question of some importance to the medical practitioner is very evident. A rule of law that enables him to restrain an enemy by an action for damages, from falsely representing him to be an ignorant physician, without being required—perhaps an impossible thing, even though the fact existed—to prove actual damages sustained in consequence, is not more than just to him; but he will doubtless fail to see why he should not have the same right when he is accused of having killed a particular patient by gross ignorance and lack of skill. There certainly can be no doubt that greater injury may be inflicted by a misrepresentation as to the facts of a particular case in a physician's practice than by loose general assertions that he is not a skilful and competent practitioner. There is probably no physician who would not be more willing to tolerate a slanderous assertion that he was "no good," than one that he had grossly neglected and maltreated a particular patient; and yet as to the former, there could be no doubt that he would have a right of suit without proving damages, while as to the latter, he would be confronted at least by a conflict of judicial opinion.

SPECIMEN OF TUBERCULAR NEPHRITIS FROM A CHILD EIGHT YEARS OLD.

BY EZRA H. WILSON, M. D.

Read before the Brooklyn Pathological Society.

I had intended if this had been an ordinary meeting to present some specimens of compound fractures of the skull, which had been subjected to operation—some post mortem cases and some which had recovered; but in view of the amount of business to be transacted, I have confined myself to the presentation of one specimen, reserving the others for a future meeting. The specimen which I wish to present is of great interest to me, as it is the most marked lesion of its kind I have ever seen. It is a specimen of tubercular nephritis removed from the body of a boy eight years of age. The very meager history of this case which I can obtain is as follows: Willie L——, eight years of age, an inmate of the Orphan Asylum, on Montrose avenue. Father died of phthisis; mother living. He was in failing health, with a constant cough. He was sent to the asylum for treatment, where the diagnosis of pulmonary phthisis was made, and he was sent to St. Catherine's Hospital on the 6th of January. Physical examination revealed the fact that both lungs were extensively involved in the tubercular process and contained many cavities.

He was very weak, much emaciated, and lived only three days after his admission. Died on the 9th of January. Autopsy January 10th, 3 P. M. *Body*, externally emaciated, rigor mortis marked, no oedema.

Head not examined.

Thorax. Heart normal.

Lungs, no fluid in the pleural cavities, both lungs adherent to the costal walls, and were completely honey-combed with cavities, containing yellow pus.

These cavities vary in size from that of a pea to that of a small walnut.

Abdomen, Stomach and Intestines normal. *Spleen* large, rather firm, surface presents a few small tubercular nodules, the size of a millet seed.

Kidneys; Left, surface presents fluctuating nodules, pus escapes from cut ureter, whole organ is honeycombed with cavities of the average size of a chestnut, cavities often communicating with one another and filled with pus, no trace of kidney tissue can be seen.

Right normal in size, capsule rather adherent ; cortex pale ; surface pale, clay colored ; pyramids congested.

Has a waxy appearance.

Liver large, nutmeg—no nodules, but several small spots which may be miliary tubercules.

Other organs normal.

Tubercular nephritis rarely exists alone, it is usually accompanied by tuberculosis in other parts of the body, either in the genito-urinary tract or in the lungs. It is usually unilateral, occurring according to Delafield more frequently on the left side.

The other kidney is apt to be the seat of chronic diffuse nephritis with amyloid degeneration. The lesion seems to begin in the mucous membrane of the pelvis and from there to extend to the pyramids and then to the cortex. Cheesy degeneration of the inflammatory products rapidly ensues and in this way cavities and calcareous masses are formed. The process is the same as in the lung and is often designated as "Nephro-phthisis"

As a result of this process the kidney is enlarged, nodular, filled with cavities containing pus and kidney detritus, the rest of the tissue is dense and hard. This pus contains tubercle bacilli in large numbers, and they could probably be found in the urine before death if such a lesion were suspected.

Tubercular nephritis is not of such great *clinical* interest because it is very seldom a primary lesion. The kidney is not usually the seat of a localized tuberculosis, and as a *secondary* lesion it is very apt to be overlooked by the preponderance of the primary lesion which is usually in the lungs.

The patients usually have very advanced pulmonary tuberculosis and may die of it without the renal trouble having been recognized. The presence of renal tuberculosis in this case was not recognized during life although an examination of the urine for tubercle bacilli would undoubtedly have revealed it.

BROOKLYN GYNÆCOLOGICAL SOCIETY.

This Society was organized in Brooklyn on the evening of April 17th, and the following officers were elected: President, John Byrne, M.D.; 1st Vice-President, A. J. C. Skene, M.D.; 2d Vice-President, Charles Jewett, M.D.; Recording Secretary, S. G. Baldwin, M.D.; Corresponding Secretary, R. L. Dickinson, M.D.; and Treasurer, William Maddren, M.D. We extend a cordial welcome to this new organization, and wish for it a happy and useful future.

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EDITORIAL.

YELLOW FEVER.

The question is often asked, when cases of yellow fever are reported at the quarantine station in the lower bay, whether there is any danger of the disease obtaining a foothold in this latitude. In discussing this question in reference to Canada, Dr. Frederic Montizambert, the efficient Medical Superintendent of the St. Lawrence Quarantine Service, says: "An average temperature of 72° Fahr. is generally held to be necessary for the development of this disease. The mean temperature during the hot season in Quebec, and Montreal especially, during a "heated term," is often higher than that which has been registered as the mean, whilst an epidemic has been at its acme in other places. In Spain and Portugal—which, like ourselves, have frequent intercourse with West Indian ports—yellow fever epidemics prevail from time to time. Thus Sternberg tells us that the city of Cadiz suffered in 1700, 1730-1, 1733-4, 1764, 1780, 1800, 1804, 1810, 1819-21. The epidemics of 1800, 1810 and 1819 were not limited to the city of Cadiz, but the disease extended to the interior, and caused a considerable loss of life in the Provinces of Granada and Andalusia, and also in some of the towns of Murcia and Catalonia, especially in Barcelona, from which city the disease was conveyed to the Island of Majorca during the last epidemic. Local outbreaks as a result of importation from the West Indies occurred in Gibraltar in 1828, Barcelona in 1870, and Madrid in 1878. An epidemic of the disease was inaugurated at Lisbon in 1856, and during the following year developed into a devastating scourge, which extended to the towns of Belem, Olivaes and Almada. According to Hirsch, yellow fever prevailed to a limited extent at Quebec in 1805,

and at Halifax in 1861. Vessels arriving infected with yellow fever have caused limited outbreaks in the ports of Plymouth and of Southampton. The same thing occurred at Brest in 1856, at St. Nazaire in 1861, and at Swansea (Wales) in 1864. The mean temperature of this last city at the time was only 67° Fahr. Coming down to this year (1889) an epidemic has occurred at Vigo, in Spain. In that city and neighboring coast cities nearly 1000 persons were attacked. From 10 to 12 per cent. of these persons are officially acknowledged to have died.

“From such facts as these it would appear that, whilst there may not be much danger of an epidemic of yellow fever in Canada, yet to allow our ship laborers to enter and work in the hold of a vessel infected with that disease, in any of our seaports in summer, might readily lead to at least a localized outbreak. So might also the landing of infected clothing, etc. Acting on this belief, I do not allow any vessel with yellow fever cases on board, sick or convalescent, or reporting the occurrence of the disease on board, to pass the quarantine station until the atmosphere of her hold has been driven out by our steam fan, and she has been thoroughly fumigated and disinfected.”

BROOKLYN MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The Local Committee having in charge the arrangements for this meeting has made its final report, and has adjourned *sine die*. This report shows that the total amount of money collected to meet the expenses of the meeting was \$3,361.10. Of this the city contributed \$1,000, and \$900 were received from individual subscribers. The balance, \$1,461.10, was paid by exhibitors for space in which to display their goods at the Health Exhibition. The total expenses thus far amount to \$3,212.26, leaving a balance in the treasury of \$148 84. The Committee has published in pamphlet form the report of its special Committee of Awards, and will give a testimonial on parchment to each one of the exhibitors to whom such an award was recommended by the Committee. This list of awards is published in full in the present number of the Journal. The printing of this report and its transmission to the members of the American Public Health Association, together with the engraving of the testimonials, will probably consume the balance of the funds. The Local Committee is to be congratulated on such a satisfactory financial exhibit. It is certainly the exception, in an undertaking of the magnitude of the Brooklyn meeting, to have funds enough not only to meet all expenses without stinting, but to have something left over.

CRUIKSHANK vs. GORDON.

In this number of the Journal we publish a paper which will, we think, be of great interest to our readers. It is from the pen of W. M. Rosebault, Esq., the attorney for Dr. Cruikshank in his recent suit for slander. In a future issue we shall publish the opinion of the General Term of the Supreme Court, and also of the Court of Appeals, in this now famous case. The thanks of the entire medical profession are due Dr. Cruikshank for the fight which he has made in behalf of that profession, in his effort to sustain its dignity and good name, and we are glad to be able to congratulate him upon the successful result of his suit.

THE BROOKLYN EYE AND EAR HOSPITAL.

We very much doubt whether any other institution in this city can show such an amount of work accomplished for the money expended, as does the Brooklyn Eye and Ear Hospital in its last annual report. During the year 1889, 9,031 new patients were treated, of whom 1,096 required surgical operations. The total number of visits made by these patients to the Hospital was 35,758. This vast work has been accomplished, including board furnished to in-door patients and medicines given to the poor, with the expenditure of but \$5,631 42. If this record can be paralleled we should be glad to record the fact.

THE BROOKLYN HEALTH EXHIBITION.

This Exhibition deserves for many reasons an especial record. It was the first exhibition of sanitary goods and appliances ever held in this country, but we hope will not be the last. Eighty exhibits were made, some of which included a large number of articles. The Committee of Awards has exercised admirable judgment and discretion in the selection which it has made of the articles for which testimonials are to be awarded, and of which honorable mention has been made. This task, considering the character of the articles exhibited, must have been an arduous one, and the recipients of awards, whether of "testimonials" or "honorable mention" may justly be proud of the honors conferred. The award of a committee numbering among its members men of such world-wide reputation as Drs. Stephen Smith, A. N. Bell, and A. L. Gihon, is a sufficient guarantee of the worth of articles which they pronounce to be "specially meritorious."

OBITUARY.

JOHN BALL, M.D.

Dr. John Ball was born at Hanover, Morris County, New Jersey, in May, 1818. He was, therefore, in his seventy-second year at the time of his death, which occurred April 1st, at Daytona, Florida.

In 1882 he married Anna C. Weeks, of New York City, who survives him.

His early education was obtained at the district school in his native place, and thereafter he studied at Morristown and Newark.

When very young he showed a fondness for the study of medicine, and this interest grew steadily into a fixed purpose to prepare himself for the profession, which was his life-work.

He graduated with honor from the medical department of the University of the City of New York, in the class of 1846.

Soon after he graduated he commenced the practice of his profession in Brooklyn, locating on Washington Street, which was then the fashionable quarter of the city. He had an active professional career in this city for nearly forty-five years, and he was eminently successful as a practitioner, enjoying a large and lucrative practice.

In August, 1851, he was elected to the position of Chief of the Eye and Ear Department of the Dispensary now located at No. 11 Tillary Street, which position he held for thirteen years. His opportunity for observation and study in this branch of medicine induced him to make it somewhat of a specialty at that time.

In 1873, however, he turned his attention to the treatment of diseases of the uterus induced by stricture of the cervix; and devised a new method of relief in this class of cases, which consisted in the forcible and rapid dilatation of the cervix uteri by means of instruments designed by himself.

This method of operating was new to gynæcologists, and met with severe opposition and considerable censure, but it was finally adopted by specialists as an excellent operation in a certain class of cases, and has come into very general use.

In 1886 he established a sanitarium at Daytona, Florida, where he resided during the winter months, for the past few years, and received and treated many invalids from various parts of the country. It was at this resort that he died.

He was a man of kindly disposition, of sterling integrity, and his memory will long be cherished by many of the poor of this city to whom he was especially kind and charitable.

PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular monthly meeting of the Medical Society of the County of Kings was held at the Society rooms, 356 Bridge Street, on Tuesday evening, March 18th, at 8 o'clock.

President Chase in the chair; Dr. George McNaughton, Secretary pro tem.

There were about seventy-five members present.

The minutes of the previous meeting were read and approved.

The Secretary presented the following applications for membership:

Thomas Urquhart Joyce, 745 Union Street, L.I.C.H., 1881; proposed by Dr. William M. Hutchinson; Dr. Charles Jewett.

R. P. Thompson, 271 Vernon Avenue, L. I. C. H., 1886; proposed by Dr. William M. Hutchinson; Dr. E. A. Hatch.

Frank E. Boyden, 622 Marcy Avenue corner Hart Street, Harvard, 1885; proposed by Dr. Walter B. Chase; Crawford D. Beasley, M.D.

James M. Griffin, 1292 Bushwick Avenue, Albany, 1869; proposed by Dr. L. E. Meeker; Walter B. Chase, M.D.

Charles H. Jones, 494 Third Avenue, L. I. C. H., 1889; proposed by Dr. A. J. C. Skene; Paul H. Kretzschmar, M.D.

The name of Dr. Eugene J. Kenny having been recommended by council, on motion, Dr. Kenny was declared elected to membership.

REPORT OF COUNCIL.

The Council beg to report that they have examined the credentials of Dr. J. T. Burdick, and would recommend that he be elected to membership in the Society.

The Council also voted that the following action, taken at the March meeting, be reported to the Society as adopted rules of the Council:

1st. That all papers read before the Society should be considered as the property of the Society, and that such papers should be published in the journal of the Society, viz., the *THE BROOKLYN MEDICAL JOURNAL*, provided the capacity of this journal would permit, except the reader or author of such papers shall, before presenting them before the Society, obtain the consent of the Society to publish them elsewhere.

2d. That in all cases in which the Editorial Committee were in

doubt as to the propriety or desirability of publishing any particular papers that had been read before the Society, or discussions that had been given, the matter be referred to the Council for decision.

3d. That all applicants for membership be notified to call at these rooms for their diplomas and other documentary evidence of good professional standing that may have been submitted to the Board of Censors, as soon as such diplomas, etc., had been acted upon by the Censors, and that such diplomas, etc., be returned to no one except upon the presentation of a notice to call for same; these notices when so presented to be preserved to act as vouchers, to show that diplomas and other credentials belonging to applicants had been returned to their rightful owner.

The Council also voted that the following resolution, which was unanimously adopted, be also reported to the Society:

Resolved, "That it is the opinion of this Council that all diplomas from such foreign countries as do not recognize or acknowledge American diplomas should not be endorsed by medical colleges in the State of New York."

Dr. MADDREN moved that the recommendations of Council be considered separately, beginning with the first. Seconded.

Dr. SKENE moved as an amendment that the last part of the recommendations be considered first. Seconded.

A vote being taken on this amendment, it was declared lost.

The original motion of Dr. Maddren was then put and carried, and the report of Council was taken up.

The recommendation that Dr. J. T. Burdick be elected to membership was discussed at length. Dr. Maddren stated that two previous Boards of Censors had rejected his application purely on the ground that he was not a graduate of any regular school of medicine and that his diploma was not endorsed by any medical college in this State, and he further moved the following resolution:

Resolved, That the name of Dr. J. T. Burdick, recommended by the Council for election to membership be referred back to the Board of Censors for their further consideration, and that they formulate a decision on the question whether it is proper (legally) for the Society to admit to its membership applicants who are graduates of schools other than the regular, and report at the next meeting.

Dr. SKENE.—The facts as I remember them, Mr. President, are these: This gentleman, I believe, is a graduate of an eclectic school which died years ago, consequently it paid a penalty for irregularity that it might have been guilty of. We must, however, speak well of the dead, so we must speak well of his alma mater. That was taken into consideration by the present Board of Censors, and they also had

ample evidence that he was a gentleman who practiced and claimed to practice regular medicine; that he was reputable; in fact, that there was nothing in the law to keep him out; and I believe it was said that he had a claim for admission according to law. In view of these facts and the fact that the Censors of last year left the matter open, the present Board of Censors took the action which has been reported to-night. Had the previous Board settled the question, I am sure that the present Board would not have gone back of their returns.

Dr. JEWETT stated that he believed that any graduate of a legalized medical college could claim and gain admission to the Society under a mandamus, but was without positive knowledge on which to base such belief.

The Chair stated that he believed the Board of Censors were influenced in their decision by the fact that two graduates of irregular medical schools had been admitted to membership in the Medical Society of the County of New York on the statement that they were not practitioners of sectarian medicine.

Dr. HOPKINS stated that he believed Dr. Burdick held a commission as assistant surgeon from the United States Government during the war, and questioned whether that did not entitle him to recognition as a legal practitioner.

After some further discussion the motion of Dr. Maddren's, to refer the matter back to Council, was put and carried.

The resolution in regard to diplomas from medical colleges in foreign countries was then taken up.

Dr. KRETZSCHMAR spoke at some length upon this resolution, protesting vigorously against the passage of such a resolution based, as he claimed, upon a newspaper report to the effect that American diplomas were not recognized in Berlin. He said that American diplomas never have been recognized in any foreign country, and that the Society would be laughed at if it adopted such a resolution and published the same, which it would have to do in order to be of any effect, and further moved the following:

Resolved, That this Society disapproves the action of the Council in passing a resolution recommending that diplomas from such foreign countries as do not recognize American diplomas be refused endorsement by medical colleges in the State of New York. Seconded.

Dr. SKENE moved, as an amendment, that the report of Council on this matter be accepted and adopted. Seconded.

In support of the amendment Dr. Skene stated that this matter was not brought up simply because the Berlin schools objected to our diplomas, but that the matter was urged fifteen years ago; that many men came here with diplomas from foreign countries, and they were

allowed to practice on the strength of such diplomas, which would not allow them to practice at home, but simply entitle them to come up for examination before a National Board of Examiners, who granted a license to practice only to those who passed the examination successfully. He said: "This resolution which is proposed makes no difference in the law. It simply shows how the Medical Society of the County of Kings feel in regard to the question, and that we believe that we should treat the diplomas of foreign countries in the same way in which they treat ours."

The Chair then put the question on Dr. Skene's amendment.

Dr. KRETZSCHMAR objected, and appealed from the ruling of the Chair on the ground that Dr. Skene could not offer as an *amendment* to his motion a directly opposite proposition.

A vote being taken, the decision of the Chair was sustained, and the amendment of Dr. Skene, approving and accepting the last resolution of the Council, was put and carried, the original motion of Dr. Kretzschmar being declared lost.

Dr. Wight raised the question whether the Examining Board of the United States Army and Navy recognized the diplomas of our regular medical colleges, and whether they examined anybody who was not a graduate of a medical school.

The Chair introduced Dr. Gihon, of the United States Navy, who replied to Dr. Wight's inquiry. He said: "The Naval Board and the Army Board of Examiners do not recognize a man's proficiency as a physician simply because he has a diploma. They examine him without regard to that. They have examined men that had no diploma and passed them; and some of the most efficient men in the service to-day come under this head."

SCIENTIFIC BUSINESS.

The first paper of the evening entitled "Treatment of Pseudo-Membranous Laryngitis by Mercurial Fumigation," by Dr. George E. Law, was read, and discussed by Drs. Jewett, Fox, McNaughton, Maddren, Tetamore, Hopkins and Briggs.

The second paper of the evening entitled "Pathology and Treatment of Aggravated Hæmorrhoids," by Dr. L. S. Pilcher, was read, and discussed by Dr. J. S. Wight.

The third paper of the evening entitled "Predisposition to Pulmonary Phthisis, and the Prophylactic Value of Pulmonary Gymnastics," by Dr. George A. Evans, was read, and discussed by Drs. Fox, Mosher, Maddren and Briggs.

The President then introduced Dr. Hunter, President of the Medical Society of the County of New York, as follows:

In behalf of the Medical Society of the County of Kings, I extend to you a welcome and hearty greeting. I felt that it was desirable that the medical profession living on either side of the river should become better acquainted with each other, and as a first step in that direction I asked Dr. Hunter to be present with us this evening.

Dr. HUNTER.—Mr. President and Members of the Medical Society of the County of Kings, I am very glad to be present with you this evening, and am happy to extend to the members of the Medical Society of the County of Kings the greetings of the Medical Society of the County of New York, and hope that we shall have the pleasure of seeing the members of this Society present at our meetings, and that there will be a continuous exchange of courtesies between our two societies.

UNFINISHED BUSINESS.

The Chair stated that this Society was entitled to representation in the Congress for the Revision of the Pharmacopia held at Washington, and as it was necessary to appoint delegates, he had appointed a committee of delegates consisting of Drs. Frank E. West, Joseph H. Hunt and Charles E. De La Vergne.

On motion, this action was approved.

NEW BUSINESS.

The Chair appointed the following Committee on Registration: Drs. John Harrigan, J. L. Kortright, Henry L. Cochran, J. C. Kennedy, Edward Parkes, George B. O'Sullivan, D. Morris Woolley, S. D. Boggs and D. C. Holton.

There being no further business, on motion the meeting adjourned.

GEO. McNAUGHTON,
Secretary, pro tem.



BROOKLYN SURGICAL SOCIETY.

Meeting of February 20, 1890.

Discussion of paper, entitled "Cases in Abdominal and Genito-Urinary Surgery," by Lewis S. Pilcher, M.D., (BROOKLYN MEDICAL JOURNAL, Vol. IV., No. 4).

Dr. RAND.—In reference to the propriety of relieving the distension of the intestine before discovering the seat of obstruction, it would occur to me that, in some cases at least, the difficulty of locating the obstruction would thereby be increased. Where the distension is

moderate in amount, the distension itself will be a guide to the surgeon in his search for the stricture or the obstruction.

In regard to the operations of internal and external urethrotomy for deep-lying strictures, I concur in Dr. Pilcher's views. I believe that the external is a far safer operation where the stricture is at or beyond the bulb of the urethra. My own cases have been uniformly successful and made prompt recoveries where I have done the external operation. There is less danger to the patient, a less tedious recovery in some cases at least, and a more permanent result, when the stricture is in the deep urethra, after external than after internal urethrotomy. Yesterday I passed a No. 34 sound on a patient upon whom I did an external perineal urethrotomy four or five years ago. I had not seen him for two years or more, and no instrument had been passed during that time. A 34 sound went in easily by its own weight without any pain or bleeding, showing me that in this case as near a cure as it is possible to obtain in an extensive fibrous stricture had been accomplished by a free division of the stricture both in the floor and in the roof of the urethra. Such a result could not have been obtained in such a case by an internal urethrotomy.

In regard to the question of calculi, if I may be permitted at this time to present a specimen of urethral calculus taken from a patient only two years of age, I shall be glad to do so. The little patient had been suffering from dysuria for a number of months, and when seen by Dr. Hutchinson, through whose kindness I saw the case, had been unable to pass urine for twenty-four hours. The doctor found an obstruction at the peno-scrotal junction. The nature of the obstructing body was easily determined by a probe, and finding it impossible to extract it with forceps, I removed it by a longitudinal incision. The urethra was dilated into quite a pouch where the stone had rested, and its membrane was thickened considerably. There was also some dilatation of the urethra posteriorly. The wound healed in a few days. The point of interest in this case is the extreme youth of the patient, it being the youngest subject of urethral calculus that I have seen or heard of.

Dr. FOWLER.—I think most surgeons are agreed that if laparotomy must be done for acute intestinal obstruction, the only rational course to pursue is to discover if possible the seat of the obstruction and to relieve it. The special method of manipulation of the intestines under these circumstances must be guided entirely by the conditions as found after opening the abdominal cavity. It has been my good fortune upon occasion to find, within a very few minutes, and with comparatively little handling of the intestine, the point of obstruction with comparatively little trouble. These are the exceptional cases; the rule is that a prolonged

search is necessary, and of all the difficulties in the way of pursuing the search, none offer to the surgeon greater embarrassment than the ballooning of the intestines themselves, and the difficulties of keeping them out of the way. My plan under these circumstances has been to pursue the search until some considerable difficulty is met with in keeping the ballooned mass of the intestinal coils out of my way, and then to select the portion most distended and nearest to the then present point of search, incise it to the extent of half an inch (after rolling the patient upon his side in order to prevent the fecal contents finding their way into the abdominal cavity), and after thoroughly emptying that particular loop, closing the opening again and continuing the search as before. To entirely empty or to attempt to entirely empty all that portion of the intestinal cavity prior to making special search for the obstruction, will, as Dr. Rand suggests, rather embarrass than help one, inasmuch as one is guided by the lessening or increasing ballooning as well as the increasing or lessening lividity of the intestinal tube. One cannot know whether he is proceeding in the right direction or otherwise unless some such guide as either of the two conditions I have mentioned is available.

In all cases it becomes necessary at some stage of the operative procedure to employ some method of emptying the over distended coils of the intestine. The condition of the intestines themselves, I think, under these circumstances, frequently governs the ultimate prognosis. Cases in which the distension has been in existence for a considerable length of time, and in which the intestines are distended and have lost that peculiar glossy look which they present normally, are quite apt to perish, in my experience. This seems to be due to the interference in the circulation in the particular portion of the intestine involved, and probably to some paralysis of the vaso motors.

The question of enterectomy with intestinal anastomosis is, I think, pretty well decided now in favor of Senn's method, as against circular suturing of the intestine. I think inasmuch as time is a very important element in connection with all abdominal surgery, and particularly with laparotomy for intestinal obstruction, the time saved alone by the method of Senn will be the means of considerably lessening the mortality, even if the method of circular suture could be considered as safe as the method of establishing an anastomosis from a point above the obstruction to the loop of the intestine below and as nearly as possible to the point of obstruction.

If the determination or the decision of the question as to whether internal or external urethrotomy is the most desirable operation in stricture of the deep urethra, or beyond the peno-scrotal junction, the weight of authority, and this is entirely in accord with

my own experience, is in favor of external urethrotomy. But no hard and fast rule can be laid down. There are cases in which an external urethrotomy is imperatively demanded. In the first place, in the case of a tight stricture of the deep urethra, in conjunction with an attack of cystitis, we require external as against any other operation. The co-existence of an enlarged prostate with retention, and a stricture in front of the enlarged prostate will demand an external perineal urethrotomy.

On the other hand, there are instances, and I have met with quite a number, where the internal divulsion, after the manner of Thompson, antiquated as it may appear at this day, gives excellently good results. There are cases in which there is very little or perhaps no cystitis; when patients are at the time of life when the knife is dreaded, or in whom no cutting operation will be allowed, patients in whom it is deemed desirable to offer a method without necessarily cutting. In this class of cases, and in the class of cases in which by accurate measurement of the length of the stricture it is found that it is exceedingly narrow in its limits, the area which it occupies in the deep urethra being not more than an eighth or a quarter of an inch, the method of divulsion gives eminently satisfactory results. I would say, however, that in the old method of divulsing and then letting the patient pass urine over the divulsed portion where the stricture itself has been torn by the method of divulsion, there is to be found a great deal to be objected to. My own practice has been to catheterize the patient every six hours after such a divulsion, to wash out the bladder and the urethra with a boro-salicylic acid or some other antiseptic solution, withdrawing the catheter at the very last, and washing the urethra after the urine has passed along it, as some must, even though the catheter be used. With this precaution, and I have done this operation in quite a large number of cases, I have never seen any evil results from divulsion of the deep urethra.

As regards the continued after-treatment, we are all agreed that even where the urethra is incised, it is necessary for a period of months, and for absolute safety for a period of years, to pass a sound; not a sound which represents the full original caliber of the urethra, because if attempts are made to carry out this plan and trust the patient to do it, he will be appalled by the size of the sound, and the result is that after having been left to himself for a few weeks or months, he will neglect the treatment entirely, and there will be a relapse. This is the rule, whether an internal divulsion or an external urethrotomy has been done. So, as far as the after-treatment in these cases is concerned, it will be necessary to pursue almost an identical course in both cases. I believe careful washing out of the urethra after the use

of the catheter that the immediate results will be as good by internal urethrotomy. Now, as to the length of time which the patient must remain under treatment and under the surgeon's care: With the external wound open and urine flowing from it, the patient must be more or less a source of solicitude to himself and care to the surgeon, until the perineal opening is entirely closed. Not so when divulsion has been done; from the time when the surgeon washes out the bladder the patient can take care of himself, and I believe the after-treatment is very much lessened in point of time by the method of divulsion.

I would say, therefore, that if the area which the strictured portion of the deep urethra covers is greater than three-eighths of an inch, and particularly if it be made up of rather hard urethral cicatricial tissue that the external perineal urethrotomy is the operation to pursue. But, as I said in the beginning, no hard and fast rule can be laid down, and the objection made to the internal method in these antiseptic times can be mainly met by the evacuation of the bladder and the persistent washing out of the same subsequently.

The case of Dr. Rand's is unique in that it occurred in a child so young. I have no knowledge of the occurrence of any case so young, nor do I know of any literature upon the subject.

Dr. RAND.—My remarks were based upon the supposition that we were discussing the relative merits of only internal and external perineal urethrotomy. In regard to the operation of divulsion it still has a place in urethral surgery, as Dr. Fowler has indicated, although the present tendency among surgeons is to let the external operation supersede it. It would seem to me unnecessary to continue catheterization for so long a time as suggested by the Doctor, where the urine was fairly normal; for after two or three days the average urethra will rebel against such oft-repeated passages of the catheter; and by this time the wound has so far begun to granulate that there is but little danger of absorption of urine. In my own practice the results have been better where I have discontinued the use of the catheter and antiseptic solution at the end of the second or third day.

Dr. FOWLER.—I would say in reply that no two cases are alike, and while many cases would be helped by the withdrawal of catheterizing the third day, yet in many there is a condition that demands its continued use. There exists normally in old people an ampullated condition of the urethra at or near the bulb, and in young persons who are the subject of stricture, the same condition is found, and the existence of this very condition favors a deposit of urine at precisely the point where the greatest danger is to be apprehended from septic infection. My own judgment is that I would rather pass the catheter a few days longer than take the risk of having infection occur at that point. I

have catheterized patients for a much shorter time and have had excellently good results; on the other hand, I have had occasion to regret that I did not persist in catheterizing for an additional length of time.

Dr. RAND.—Using as large a catheter as the urethra will normally admit?

Dr. FOWLER.—As large a catheter as can be used without pain. I have seen instances where I am sure that a chronic urethritis has been set up by following Otis' rule that the largest size possible should be used. I have had occasion to regret having followed this rule, and my plan is now to admit as large sized catheter or sound as can be used day by day without increasing pain, or excessive pain; but where the introduction of the instrument produces greater pain upon every occasion than the previous one, I have used a smaller one.

Dr. RAND.—I think Otis' rule should be discounted in many cases. For my own part, I have always used a small sized catheter for irrigation.

Dr. FOWLER.—The catheter I have been in the habit of using for washing out is a large metallic double-channelled catheter.

Dr. RAND.—I have always depended upon a soft rubber catheter.

Dr. PILCHER.—I feel very much gratified at the full consideration which this desultory paper of mine has received at the hands of the gentlemen this evening. I can say, in conclusion, simply this: In regard to the possible objection to the relief of distension which has been suggested by Dr. Rand—that the relief of the distension does not mean the complete emptying of the intestine—that there is no danger of going to such an extreme in the attempts at relieving troublesome distension, that would materially lessen the distinction which should exist between that portion of the intestine which is above the trouble and that which is below it.

With reference to the use of divulsion, it is many years since I used divulsion within the urethra for any purpose. I am, on general principles, opposed to doing anything blindly, and I can hardly conceive of a condition where it would be better to make a blind tear, the whole extent of which cannot be known, than to make a limited incision, the full extent of which is absolutely under control. So it has seemed to me in all those conditions where it is necessary to divide in any way, that the properly gauged knife is the best thing to use.

Dr. LEWIS.—Do you mean in ordinary stricture that you do not use dilatation?

Dr. PILCHER.—Oh, no; what I mean by divulsion is that forced dilatation which tears apart the tissues at one fell swoop. The word "divulsion" in urethral surgery I think has a distinct meaning. I

think when we speak of divulsion, we all mean that we have produced a rent in the tissues.

Dr. LEWIS.—You produce a rent in gradual dilatation sometimes.

Dr. FOWLER.—Although it does happen that the incision in the urethra does not always limit itself to the diseased portion, and frequently must involve much more than the diseased portion, and if the deposit, periurethral as it is, involves the roof of the urethra, it may not be reached at all, and in that case the normal urethra and periurethral structures alone are open.

Dr. PILCHER.—Hence the desirability of operating so you know what you have done.

Dr. FOWLER.—It frequently happens that one is compelled to do an external urethrotomy without any guide at all, in which case one must open up the urethra freely; the incision involves more than is necessary, and sometimes involves a portion of the healthy urethra itself. Under these circumstances many of the advantages claimed for external perineal urethrotomy over divulsion are lost.

BROOKLYN DENTAL SOCIETY.

At a stated clinic of the Brooklyn Dental Society, held at 444 Fulton Street, Brooklyn, on Monday, March 24, 1890, Dr. M. L. Rhein repeated his clinic with chloride of methyl, and satisfied all present that he has suggested the most efficient and painless anæsthetic for sensitive dentine yet introduced. It is undoubtedly better than the spray from a nitrous-oxide cylinder, which was described and demonstrated recently before the Odontological Society in New York. Your committee thinks this agent of so much consequence to us, and the method such a boon to suffering humanity, that it suggests that a copy of this part of the report be sent to all the leading journals, that the matter may be brought to the attention of the profession in a prominent way immediately.

It has been previously demonstrated that dehydration produces anæsthesia in dentine, and that sprays have this effect. But all sprays except this produce considerable pain. The chloride of methyl spray acts so instantaneously that the pain is only a momentary shock at most, and is not complained of by the patients. It may seem that this is a strong report from your committee, but since the last clinic your committee has thoroughly investigated this method, and seen it satisfactorily demonstrated in a large number of cases.

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

THE PATHOGENESIS OF URINARY CALCULUS.

Mr. Stern (Dissertation, Munich, 1889. *Centralblatt f. Chirurgie* No. 6, 1890). While Netzmann and Ebstein assume, as a direct cause of the formation of calculi an existing diathesis, Leube, Maschka and others have expressed the view that the stone formation occurs usually as a result of a long continued disturbance of the circulation, the retarded blood current and diminished blood pressure favoring the lithic deposit.

In the course of an investigation of about 4,000 post mortem records of the Munich Pathological Institute, the author found 28 cases of nephro-lithiasis, 8 of vesical calculus, and 2 in which both conditions existed. In the majority of these disturbances of the circulatory apparatus were recognized and noted. These confirm Maschka's theory in so far as they occur as common accompaniments of nephro-lithiasis. The proof, however, is far from convincing that calculous disease depends for its causation upon these anomalies of the heart and blood vessels.

The author states, in conclusion, that affections of the heart, particularly degeneration of the muscular structure, associated with an existing special diathesis from the basis of urinary, and particularly nephritic calculi.

ARTHRECTOMY OF THE KNEE-JOINT.

Paul Sendler (*Deutsche Zeitschrift f. Chirurgie*, Bd. XXX., p. 107) S. in previous communications upon this subject, maintains the superiority of arthrectomy over resection in the treatment of tuberculous disease of the knee-joint. As a result of increased experience he now reiterates his formerly expressed opinion as to the value of the newer method. He combats the objections to the latter, and claims for it healing without shortening and the occasional occurrence of mobility of the joint to a greater or less extent as a result of this particular procedure, and asserts that it should always, when possible, be given the preference. It is regarded as one of the most serious objections against the evasion, partial resection or arthrectomy, that foci of tuberculous deposit or infiltration are further apt to be overlooked, but S asserts that large deposits may be diagnosed by circumscribed tenderness on pressure before the operation, and that smaller ones are easily recognizable by the fragile or carious state of the cartilaginous covering of joint surface during the operation. The principle recently emphasized

by V. Zoeger, Manteuffel (Centralblatt f. Chirurgie, 1889, p. 488) that without exception, an operation for the radical cure of tuberculous joints necessarily involves, to insure complete success, the securing of a bony ankylosis of the joint can no longer be maintained in the face of continued experience with arthrectomy in furnishing improved functional results—*i. e.*, limbs of equal length, and movable joints. The average length of time in hospital, in 18 cases reported by S., was 45 days, showing a considerable advantage in this respect over the older operation of typical resection. Four of these cases have passed the third year following the operation and no recurrence has taken place; the remaining 14 are of more recent date. In one case secondary amputation was necessary, and in another the result was unsatisfactory because of a previous paresis of the extremity. With these exceptions the results, both as regards rapidity of healing with fistulous tracks, comparative length of the limbs, and normal or almost normal movements of the joint, were entirely satisfactory.

It may be said that S. insists that every case must be submitted to early operation; but a few weeks of continued non-operative treatment are allowed to elapse before arthrectomy is resorted to. By this early interference the usual cause of shortening, namely, the invasion of the epiphysis, either by the disease or the surgeon's knife is avoided.

The operative technique and after-treatment of S. consists in, 1st.—The employment of long lateral incisions into the joint in order to obtain access to the synovial sac, avoiding interference with the flexion and extension apparatus attached to the joint, in order that early movements of the parts may be carried on. 2d. In case of primary union the patient is directed before the end of the first week to make slight attempts at moving the knee-joint, the dressings being lightly applied for the purpose. The greatest stress is laid upon the necessity of insisting upon the extension movements being properly performed; those of flexion follow naturally in the course of time.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

CÆSARIAN SECTION AND THE PORRO OPERATION.

Münchmeyer (Archiv f. Gyn., Bd. XXXVII., H. 2). Seven Porros and twenty-eight classical Cæsarian operations have been done in the Dresden clinic in five years. All the mothers operated by the Porro method were saved. Ten and seven-tenths per cent. were lost after Cæsarian section. It would be a mistake, however, to conclude that

the Porro operation deserves the preference. The total result for the women is much less favorable. Not only is the woman sterilized but recovery is much more prolonged and hernias more frequent. When possible, therefore, the uterus should be saved. Zweifel says that amputation of the uterus is permissible only when it is unsafe to leave it: e.g., when the organ is septic, when drainage is impeded by vaginal cicatrices, in case of large uterine fibroids which would render a subsequent operation necessary, in osteomalacia, or when the uterus remains relaxed after suture. In the Dresden cases the indications were in one a septic uterus, in another depraved general health forbidding further pregnancies, in three cases carcinoma and in one great and persistent relaxation of the uterus.

The following points in the technical methods of the author are of interest. He thinks with Schauta that too firm or too long continued constriction of the cervix may interfere with subsequent contractions of the uterus. Manual control may be better than the tube. He even-trates the uterus and protects the peritoneal cavity against the invasion of fluids by provisional abdominal sutures and by sponges pressed about the uterus over the abdominal incision. In the Porro operation the edges of the peritoneum are drawn out and stitched to the cervix. The constricting tube is then placed over the suture line, or the peritoneal surfaces may be stitched together below the tube. The mucous membrane is removed from the stump. The conical cavity thus left and the whole stump are cauterized with the Paquelin cautery. Frank's inversion of the stump is endorsed but is not thought so simple as Beaucamp believes.

The paper concludes with observations upon suture materials for Cæsarian section. Chromic acid gut prepared by Mikulicz's method had been found perfectly preserved after lying in the uterine tissues sixty-four days and even longer. Silk sutures were found partially absorbed after fifty days in animal tissues, the unabsorbed portion being easily torn. In other cases they had wholly disappeared. In view of the satisfactory results attained with chromic gut in the Dresden clinic M. thinks that material should not be rejected. The ideal suture is one which will not hinder subsequent pregnancies and which will remain unchanged till the union is sufficiently firm and then undergo rapid absorption. Sublimated gut absorbs too soon, chromic gut (after Mikulicz) and silk too slowly. The writer thinks the required conditions might be fulfilled by cat-gut exposed for two hours or less (instead of five as practised by Mikulicz) in the chromic acid solution.

CÆSARIAN SECTION.

Howard Kelly (*Am. Jour. Obstet.*, Mar., '90) reports three successful cases of the Cæsarian operation. Two were done on the absolute,

one on the relative indication. The condition of the first patient was almost hopeless from exhaustion. In the second case the labor was induced by puncturing the membranes an hour before operating—a mistake, as the author subsequently admits. In the third case the operation was done before the onset of labor. The author comments upon the obvious advantage of setting the time for operating. The uterus contracts as well as in case the section is done after labor is established, and drainage is ample or can readily be made so. The importance of rapidity is emphasized as an essential element of success. To this end the preparation should be full and complete.

The Kelly pad greatly promotes the comfort of both operator and patient, catching the discharges and permitting copious flushing of the abdomen without flooding the table. In two of the cases the extraction of the child was complicated by the head becoming locked in the uterine incision and the wound was extended into the lower segment. This difficulty is a common one in extraction by the feet, which is the method generally advised and practised. The abstractor found it easier in one case to deliver rapidly by the head and he believes this method will generally be found feasible.



PRACTICE OF MEDICINE.

BY HENRY CONKLING, M. D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

PULMONARY TUBERCULOSIS.

In the study of the literature of consumption, it is interesting to notice the change produced in the discussion by the discovery of the bacillus tuberculosis. Great stress has always been laid upon the nature of the predisposition to the disease; while the conclusion of the discussion of the exciting cause has always been two words: *some irritant*. While the majority of observers have agreed to the *role* played by the bacillus, there are still some eminent men, particularly among the English school, who continue to preserve a marked silence upon the subject. But the discussion itself has changed. More thought is being given to the method of commencement and the infectiousness of the disease. One of the late contributions on the subject is that by Horace Dobell, M. D., of the Royal Hospital London, who writes of the initial stages of consumption. The stand which he takes on certain points is open to criticism, as far as clinical observation goes. There is no theory which has ever been advanced which has so much truth and certainty about it as the injury of pulmonary vessels through

stagnation of the blood, resulting from imperfect æration. This has and will always explain the initial lesion of tuberculosis. But Dr. Dobell goes further and advances certain theories as to whether pulmonary tuberculosis is a local or a general disease. He thinks that it might be a primary blood disease, bacilli entering the blood first; or a primary local disease, the tissue being directly affected by the bacillus. If the first be true, then it becomes a secondary local disease; if the second, a secondary blood disease. An experience in the wards of any large consumptive hospital where attention is given to case-taking, will demonstrate with continued regularity the fact that pulmonary affection, secondary to blood infection, is rare. We have our best illustration of local irritation in those cases of winter cough which have lasted several years, where congestion of pulmonary tissue produces isolated patches upon which bacilli grow and develop. We know that the bacilli may find their way elsewhere by means of the pulmonary artery. Dr. Dobell describes four methods of entrance into the body. The first of these he calls the *cutaneous portal*. It exists where some local injury, say of a joint, results from bacillary infection, producing tubercular disease followed by pulmonary phthisis in course of time. This of course is really nothing but a case of scrofulous phthisis, and it is difficult to imagine, as Dr. Dobell states, that infection through the blood has caused the lung disease. The second method of entrance is called the *alimentary portal*. The views here expressed are open to grave criticism. Intestinal infection, as a primary condition, probably does not exist. It is always secondary to lung and throat lesions. The author states that bacilli may enter by the alimentary canal and pass into the lacteal and lymphatic systems, and so become present in the body before the lung disease. This statement can hardly be accepted, but the theory advanced certainly bears a direct relation to *acute general tuberculosis*, entirely different from pulmonary tuberculosis. Our criticism of course does not concern the inflammatory intestinal diseases of children. The third method is the *respiratory portal*. This is ably discussed, and then is given the fourth and last, the *genital portal*. The author concludes this part of the paper by quoting Cornil's statement that sexual intercourse may furnish a means of contagion.

Dr. Dobell considers the true first stage as manifesting itself in abnormal physiological states, connected with the digestive and assimilative processes, producing constitutional decline. Great stress is laid upon the indigestion of early phthisis, which may cause loss of strength and vigor, by which there may be caused an active domiciliation of the bacillus. The spread of the bacillus and the formation of tubercular growth from its irritation may depend upon the areas involved, the means of escape from those areas, the power of the organ-

ism to expel the exciting cause, and certain auxillary forces. A better name for the latter would be artificial aids to natural methods.

No explanation is here given to the old and interesting subject of tissue strength—quick destruction in one case, and resistance in another. The author considers the loss of proteids *in situ* as one of the causes of constitutional decline. The blood is poorly supplied with fat elements from the food; the necessary amount for bodily consumption falls short; extra waste in the body goes on by the fat elements being consumed and destroyed; loss of weight results and this is premonitory of commencing tuberculization. The partially destroyed albuminoid matter resulting in hyperplasia of adenoid tissue, becomes the seat for bacillary growth. The relation of leucomaines and ptomaines to bodily decline is considered; they are regarded as toxic properties, depressant in their nature. Fat is considered as necessary to the formation of healthy cells. It must be given in the form of cod liver oil. Dr. Dobell makes no mention of the dose, and it is therefore impossible to state whether he believes in the method of M. Jaccoud, who gives the oil in enormous doses of from four to ten ounces. Iodoform, chloride of calciums and arsenic are recommended. It is with peculiar satisfaction that we read that Dr. Dobell *des not recommend the hypophosphites*. Clinical observation certainly shows that they are worthless, and Dr. Dobell believes that *valuable time may be lost by depending upon them*. Iodoform is of great service where there is advanced disintegration. It may also be used in the early stages and may be given in doses of two grains in pill form. Chloride of calcium is regarded as a curative medicine. A most excellent suggestion is given in regard to the use of massage. It should be employed early, moderate in character, and *centripetal in direction*. In these cases, ptomaines, leucomaines and broken-down tissues are present in the body, centripetal massage forces them toward the general circulation, and so provides for their destruction. The remainder of the treatise is given up to the consideration of various forms of diet.

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

ALUM BAKING POWDERS.

The question of the effects of alum in bread and other articles of food, has frequently been discussed by chemists and sanitarians.

Opinions have been freely given for and against its use, which are intended to confuse any but experts. Until within the past few years,

Boards of Health in this country have paid but little attention to the subject, and at the present time there is no specific legislation in this country, so far as we are aware, against the use of alum in bread. The various Health Boards have contented themselves, in most cases, with the recommendation that manufacturers of baking powders be required to print on the label the composition of the powders they offer for sale, leaving it to the public to use or reject any particular brand. There is but one firm that we know of that has published the composition of its baking powder. Physicians, at least, should know, what the public are not expected to know, as to the effects of alum upon digestion. We give below a brief abstract of some of the best known experimental evidence upon this question. Most of the physiological experiments that have come under the notice of the writer, have been conducted by non-medical men. Several chemists of note have attempted to answer the question of the effects of alum baking powders, when used in the ordinary way.

Prof. Patrick, ("Scient. Amer. Supplement," 1879), published the results of experiments in feeding cats with biscuits made with alum powders, using six times the quantity of powder usually employed, and twelve times that directed on the label.

After varying times the cats were killed, and the intestines were examined for aluminium compounds in solution. He found that when the powder was well mixed through the dough, and properly baked, none could be found in solution. He concludes: "Assuming that the human digestive fluids act in about the same way as do those of the feline race—and I believe that assumption has always been made—it seems to me established, as well by experiment as by reason, that a properly made alum baking powder, as used in making bread or biscuit, is perfectly harmless to the human system." Mr. J. West Knights, in a paper read before the Society of Public Analysts, and published in "The Analyst," vol. v., p. 67, describes in detail experiments made by him as to the effect of alum on the digestibility of bread. He first tested the effect of alum and alum baking powders on the solubility of gluten in artificial gastric juice. The conclusion he reached from these experiments was, that gluten after treatment with soluble aluminium salts is less soluble than ordinary gluten by about one-half. Experiments upon whole bread gave the following result: "the pure bread was one-third more soluble in gastric juice than bread containing the alum baking powder." Further experiment showed that alum exerts a very marked influence upon the conversion of starch by diastase. He says: "not only is the gluten of the bread but also the starch rendered much more indigestible by the presence of alum."

In the "Jour. Am. Chem. Soc.," Jan., 1880, Dr. H. A. Mott gave

a description of his experiments on feeding dogs with biscuits containing alum baking powder. Like Prof. Patrick, he employed very large quantities of the powder instead of using the usual amount, large enough in fact to produce vomiting, diarrhœa and trembling of the limbs. Two dogs, weighing thirty and thirty-five pounds were given eight biscuits each containing about a teaspoonful of alum baking powder. After four hours both vomited and had diarrhœa. The appetite did not return the next day. Three dogs, weighing between ten and forty pounds, were fed on biscuits containing one-half as much of the powder as the above, with the result of sickening the smallest one, producing diarrhœa in the second, and constipation in largest one. These experiments were repeated with cream of tartar powders without apparently disturbing the digestion of the animals.

The experiment was then tried of feeding dogs on meat mixed with hydrate of aluminium—the form in which the aluminium is actually eaten in bread and biscuit, according to some authorities—with the same result as with the biscuits. As it is claimed by some that the aluminium takes the form of phosphate in the bread, a dog was given large quantities of this compound mixed with meat. The dog sickened slightly, but did not vomit.

The author then tried the effect of alum, hydrate and phosphate of aluminium upon the action of gastric juice obtained from dogs. The results showed that all these compounds inhibited the action of pepsin, and in some cases entirely prevented the digestion of white of egg. He also showed that the liver, spleen, kidneys, blood and heart of dogs fed on the biscuits made with alum powders, contained aluminium salts. Mr. Pitkin, "*Jour. Am. Chem. Soc.*," vol. ix., p. 27, reports the results he obtained on testing the solubility of alumina residues from baking powders in gastric juice. He worked with the residues left by the alum phosphatic powders, which are most commonly used at the present time. These powders contain sodium bicarbonate, burnt alum, acid calcium phosphate and starch. Mr. Pitkin attempted to answer the following query: What proportion of the alumina residue left in the bread is dissolved in the process of digestion? He obtained the gastric juice in the usual way from healthy dogs, by means of an artificial fistula and after complete recovery. Acting upon the results obtained by Dr. Beaumont in the case of Alexis St. Martin, he digested the bread three and one-half hours—the usual time for the stomachic digestion of bread—and used biscuits made with the usual amount of powder. He used 200 grms. of gastric juice and 60 grms. of biscuit, containing 36.6 mgrms. of alumina (Al_2O_3). After three and one-half hours' digestion at 99°F , he found that 10.9 mgrms. passed into solution, or nearly one-third of the whole amount. He remarks that the

gastric juice of the dog probably would dissolve more than that of man, owing to its being stronger in acidity.

A very important contribution to our knowledge of this subject has been made by Prof. Mallet, of the University of Virginia, in "Chem. News," Dec. 7 and 14, 1888. He shows that the temperature of the interior of a loaf of bread in baking ranges from 197° F to 212° F. It has often been claimed that the heat of the oven during baking renders the aluminium hydrate and phosphate insoluble in gastric juice. A temperature of 212° F will not render these compounds insoluble in dilute acids. Prof. Mallet experimented on the behavior of the hydrate and phosphate of aluminium with artificial gastric juice made as follows: Hydrochloric acid 2.5, pepsin 3 parts, water 1000 parts. When aluminium hydrate heated to 212° F for one and one-half hours was used, from 47.3 to 61.8 per cent. of it dissolved in two and one-half hours, and from 5.6 to 14.5 per cent. of the pepsin was precipitated. In the case of phosphate of aluminium, which is always produced in using the alum phosphate powders, from 38.2 to 49.1 per cent. was dissolved, while from 25.8 to 32.9 per cent. of the pepsin was precipitated. This double effect, he thinks, may fairly be taken to indicate impairment of digestive efficacy of natural gastric juice.

Prof. Mallet experimented upon himself with the two above compounds, heated for an hour and a half at 212° F in a current of air. While on one or two occasions, particularly with the smallest doses, there was no observable effect, the general tenor of the experiments seemed to establish beyond doubt on his part, that the ingestion of aluminium compounds produced an inhibitory effect on gastric digestion. On the whole the effect was more with the hydrate than with the same dose of phosphate. There was no gastric pain, nor symptom of gastric or intestinal irritation, but the well known sensation of weight or oppression in the epigastrium, due to indigestion, and lasting two to three hours. This effect was noticed with any dose of not less than twenty grains of the hydrate, or forty grains of the phosphate. He estimates that with most alum powders now in the market, used according to directions, (two teaspoonfuls to a quart of flour) a pound of bread would contain 13 to 14 grains of hydrate of aluminium, if alum alone were used in making the powder; or 20 to 21 grains of the phosphate if the powder belonged to the alum-phosphate class. This would be approximately one-half the amount he found to produce noticeable indigestion in his own case.

Prof. Mallet regards it as a fair conclusion "that not only alum, but the residues which its baking powder leaves in bread, cannot be

viewed as harmless, but must be ranked as objectionable, and should be avoided when the object aimed at is the production of wholesome bread."

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital, Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

THE GASTRITIS OF THE PHTHISICAL FROM THE STANDPOINT OF PATHOLOGICAL ANATOMY.

Schwalbe, (Virchow's Archiv. Bd. 117, 1889). The author examined the stomachs of twenty-five patients with phthisis pulmonalis. Autopsies were conducted mostly one to two hours post mortem, seldom three to four p. m. Macroscopically, he finds that only two stomachs appear to show a real ectasia-ventriculi, wherefore he concludes that it cannot be considered as a result of the dyspepsia so prevalent in pulmonary phthisis; rather that the clinically proven dilatation of the stomach is an atonic dilatation—particularly when amyloid is excluded—and thus disappears post mortem. S. agrees with other authors that amyloid degeneration of the gastric musculature predisposes to dilatation of the stomach.

Macroscopic examination of the separate coats of the stomach reveals first, that the serosa is usually involved only in tubercular peritonitis, and miliary tuberculosis when these conditions are general in the peritoneum. Second, that the muscularis and submucosa only seldom show alteration macroscopically, *e. g.* hypertrophy of neighboring muscle, with stenotic ulceration of the pylorus. The mucosa is sometimes thickened and swollen; sometimes, but seldom, thinned, color gray-red or red, mostly transparent, sometimes more or less intensely dull, sometimes covered with small yellowish white plaques. Only seldom a considerable covering of mucus was found. Twice small flakes of sputum were found, rich in tubercle bacilli. Microscopical examination of six cases, or twenty-four per cent., showed an entirely normal condition of the stomach. Of those pathologically altered, nine showed slight interstitial inflammation. Four showed only moderate round cell infiltration. In but a single case was this found to any great extent. The remaining five stomachs were free from any interstitial changes, but in one amyloid degeneration of the mucosa and submucosa was present, and in four there was simply a moderate but universal fatty

degeneration of the submucosa. Twice amyloid degeneration was present in combination with round cell infiltration, and often interstitial inflammation with fatty degeneration.

S. finds as a result of microscopic examination that the greater number of these cases present a gastritis which is both interstitial and parenchymatous. The latter can be very marked, and the glandular stratum in its totality may be increased in surface and depth. The first change occurs usually in narrow fields and shows always the "florid" granulation stage, and no inclination either to connective tissue formation or atrophic shrinkage. This is in no sense a separate or different inflammation from the pulmonitis, an *affectio sui generis*. The appearances in the gland cells point to slow degeneration of cell structure.

Other changes, granulation, atrophy, vacuolation, formation of mucus were all observed in normal digestion.

Besides the inflammation in the phthisical patients, amyloid degeneration was present in those stomachs where this affection obtained generally. A constant relation between the anatomical changes in the stomach and disturbance of its function during life, S. could not determine. Not only was there commonly a difference in degree of intensity between the anatomical lesions on the one hand, and the functional disturbance on the other; but patients with marked gastric lesions had never complained of digestive disturbances, while others with but slight anatomical lesions had a markedly deficient digestive function. From these findings, S. disputes the claim of most authors that chronic gastric catarrh is the usual cause of the dyspepsia of the phthisical. He is much more of the opinion that in many cases of dyspepsia, nervous influences, anæmia, destruction of taste through expectoration of offensive sputa, and recurrence and oscilation of fever, are the real cause. at least so long as molecular changes in the glandular epithelium are observable neither microscopically nor micro-chemically. The circumstance that the degree of interstitial inflammation was either only insignificant or moderate, and that, therefore, it could not have lasted longer than a few weeks, or at most, months, he also remarks, and is further inclined to believe that the septicæmia caused by pulmonary necrosis is an essential factor in the ætiology of the parenchymatous inflammation of the stomach. He thinks the swallowed sputum may play an active part in the production of dyspepsia. An interchangeable relation between gastric ulcer and gastritis was not proven. The author concludes by stating that in a certain proportion of cases, the gastritis is the result of alcoholismus chronica, chronic congestion, nephritis, and indefinite causes, rather than the phthisical process.

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital; Curator and Microscopist, New York Eye and Ear Infirmary.

EXTRA-PAPILLARY COLOBOMATA.

Johnson (Knapp's Arch. of Ophthal., 1890, p. 1), in an interesting paper, gives a description of these cases, and draws some conclusions which differ materially from the views ordinarily held as to their etiology. He does not include in his paper the classical colobomata due to imperfect closure of the fœtal fissure, nor those of the optic nerve-sheath. Extra-papillary colobomata may occur in any part of the fundus, those away from the macular region being often overlooked, as they usually are found in otherwise healthy eyes possessing normal vision. That the macula is more often affected may be due to a natural weakness of this region, the fovea centralis being regarded by some as the most defective part of the retina. In the majority of cases of extra-papillary colobomata there are other traces of defective development, as microphthalmus, persistent hyaloid artery, coloboma of the nerve-sheath, opaque nerve-fibres, etc. In half of the cases observed by the author the refraction was hyperopic, as one might expect in under-developed eyes. Myopia occurred when the coloboma was of large size and near the posterior pole of the eye in consequence of yielding to the intra-ocular pressure. The field of vision showed a complete absence of light-perception over a certain area, the scotoma not, however, always corresponding, either in shape or extent, to the coloboma seen with the ophthalmoscope. Colobomata must be distinguished from sclero-choroiditis posterior, plastic choroiditis in its later stages, and from the later stages of sub-retinal or choroidal hæmorrhages and the diagnosis rests upon the following characteristics:

Sharply-defined margin surrounded by healthy tissue.

Pigment when present lies in front of the retinal vessels.

Usually single, while lesions after choroiditis apt to be multiple.

Appearances unchanged after long observation.

Position and color of the floor of the coloboma: the sclera appearing of a dazzling whiteness and like the floor of a "punched-out pit"—the depression in choroiditis being much less marked.

The vision is usually very good, often normal. Pigment is often found around the margin of the coloboma, and even over it in the form of a more or less complete network or veil lying above the retinal

vessels. The choroidal vessels which pass into view from beneath the free edge of the coloboma unite to form a dense plexus toward its centre, bearing the closest resemblance to a nævus, and the author concludes that these colobomata have many points in common with cutaneous nævi, the absence of this dense vascular structure in some of the cases being explained by the analogous occurrence of the altered condition of the skin, where nævi have disappeared and become absorbed, and adds that it is not altogether unreasonable to suppose that the mother-of-pearl-like sheen and peculiar glistening tissue which may be seen spreading over the base of some of the colobomata where this vascular mass is absent is merely the connective-tissue cicatrix of an atrophied nævus.

CONGENITAL LID DEFECTS.

Fricke (*Klin. Monatsblætter f. Augenh.*, February, 1890), after a detailed description of a case of coloboma of the lids with development of a dermoid tumor at the margin of the cornea, the patient being an otherwise healthy girl, seventeen years old, discusses at some length the views as to the origin of such defects. While allowing that Nicolin's theory of the dependence of these deformities upon a delayed or defective closure of the oblique facial cleft ("schraege Gesichtsspalte") will explain the cases of symmetrical bilateral colobomata, and the fact that in fissure of both upper and lower lid on the same side the fissure is almost never vertical, but rather oblique, thus corresponding to the direction of the oblique facial cleft, he calls attention to the considerable number of irregular cases in which single or multiple fissure of one lid occurs, and to those in which the angle of the lids is alone involved. These cases he would explain, with Van Duyse, by the action of amniotic bands or adhesions. In consequence of a too scanty amniotic fluid the amnion becomes folded and adherent to the fœtus, perhaps in such a way as to prevent by its pressure the subsequent development of the eyelids. Recent investigations have rendered probable the dependence of dermoid tumors of the face upon such amniotic bands, and it is in just these irregular cases that one is most apt to find an accompanying dermoid. He therefore concludes that amniotic bands must be credited with a causative relation to these and perhaps even a certain proportion of the regular or symmetrical colobomata.

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital;
Assistant Physician, Brooklyn Throat and Nose Hospital.

BREATHING DURING SINGING AND SPEAKING.

Mayo Collier (*Jour. Lar. and Rhinol.*, Feb., 1890). Authorities are divided into two diametrically opposed bands regarding the proper method of breathing during singing and speaking. The old school represented by the Italian Masters, and the new by the Paris Conservatoire. It may be necessary to point out that in ordinary quiet respiration the posterior and lateral parts of the diaphragm descend, and the ribs ascend and expand; and in forced inspiration the diaphragm may be made to ascend or descend to its fullest extent. The difference of opinion between the old and new schools depends upon this forced ascent or descent of the diaphragm. Inspiration associated with ascent of the diaphragm is inspiration with hollow or unprotruded abdomen, and is the method adopted and advocated by the Italian Masters. Inspiration associated, on the contrary, by forced descent of the diaphragm is inspiration with the protruded abdomen; the form advanced by more recent but less enlightened observers.

The crown of the diaphragm being forced up to its fullest extent and then retained, the muscular portion is nearly vertical, and in this position acts as a powerful agent in elevating and expanding the lower ribs, and so increasing the area of the floor of the chest cavity. The result of a forced lowering of the crown of the diaphragm is a nearly horizontal position of the muscular portion, with a further effect of, on contraction, a depression and drawing in of the lower ribs. The volume of the chest is not increased by enlarging the area of the base, or, in other words by elevating the crown of the diaphragm and thereby expanding and elevating the lower ribs.

HYPERTROPHY OF THE LINGUAL TONSIL.

J. Payson Clark (*Boston Med. and Surg. Jour.*, Feb. 6, 1890). These glands are limphoid in character and similar, histologically, to the faucial tonsils. They are situated in the space back of the circumvallate papillæ and become fully developed at puberty. The enlargement may be unassociated with hypertrophies in other parts of the throat, but more frequently is the result of extension of inflammation of contiguous part of "lymphatic ring." The female sex seems especially

disposed to this trouble. The symptoms are not in proportion to amount of hypertrophy, but to degree of sensitiveness of the patient. The subjective symptoms are cough, tickling in throat, hoarseness, pressure in the neck, localized pain, and at times shortness of breath. Singers are unable to bring out proper tone and their voices become quickly fatigued.

Voice failure may be accounted for by direct mechanical obstruction to free opening of *épiglottis* or by reflex action exerted on the motor laryngeal nerves. The hypertrophy may be in form a single rounded mass or may be divided into many bunches of glandular tissue, occasionally the growth is as asymmetrical.

The degree of hypertrophy may be judged by the difficulty experienced in freeing the *épiglottis* from the glands. In some cases extending the tongue will accomplish this, and in others no amount of effort will permit a view of the free edge of the *épiglottis*. Dr. C. C. Rice says that paroxysms of cough in these cases are not produced when the tongue and *épiglottis* meet, but when the latter tries to throw off the former. In his cases the *épiglottis* has been unusually thin, supple, and the degree of anterior *courvation* considerably exaggerated. The prognosis is good under treatment.

The remedies advocated are compound tincture of iodine, chromic acid and galvano-cautery. The latter is most rapid and efficacious, especially in the chronic variety.

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

PHYSICAL EDUCATION IN CHILDREN.

A. H. P. Leuf, M. D., (*The Journal of the American Medical Association*, April 5th, 1890). The author first considers the physical condition of children imperfectly formed, semi-cartilaginous, elastic bones, with tender connective tissue, and cartilaginous union of the shafts of bone with their epiphyses, the loosely connected muscle elements, the liberal layer of fat on muscles, and the large proportion of water, the relatively large blood vessels, the fact that they are more readily developed than in adult life, the peculiar sensitiveness of the nerve-centres of children, the quicker reflexes, probably largely due to the shortness of the peripheral nerves, thus consuming less time in the transmission of the afferent and efferent impulses. * * *

"Shortness of limb entirely aside from the rapid transmission of nervous impulses, is very conducive to the rapidity of movements so noticeable in children." In connection with growth and development

the writer states "that the association of a child's organs are new and more apt to be impressed by external influences than in an older organism. What would produce a moderate effect upon an older organism, might be powerful in its influence upon a younger one." He argues that because of the predominance of connective tissue in muscles and bones of children, and because a muscle is inserted into the very heart of a bone and not into its superficial layer, exercise has much effect upon the growth of bone. Bearing in mind the value of moderate exercise in health in increasing the nutrition of the body, the writer shows that violent exercise induces local congestion, and if persisted in, inflammation and hypertrophy. "It may in the young even cause epiphyseal separations, tearing of the periosteum and rupture of muscle." The paper closes with pointing out the value of properly arranged physical exercise in spinal curvatures, in club feet, &c., and in regulating and strengthening the nervous system, and inducing temperance, cleanliness and regular habits, as systematic physical exercise is impossible without these adjuncts or aids.

RARELY RECOGNIZED CAUSES OF ENLARGEMENT OF THE GLANDS OF THE NECK.

Louis Sturr, M. D., (*Annals of Gynecology and Pædiatry*, March, 1895). "Scrofulous adenitis and mumps are such common affections that one is tempted to refer all cases of enlargement of the glands of the neck occurring in childhood to one or the other class. There are, however, two other noteworthy causes of gland swelling that have come under my observation." One a salivary calculus, the other the eruption of the "six year" molars. The first was noticed in a child about two years old who had chronic entero-colitis and suddenly developed parotitis on the right side. The gland became very much swollen and was hard and tender. In the mouth an extreme hardness was detected near the orifice of the duct of Steno, and on incision, a thread-like calculus nearly an inch long appeared. Rapid recovery followed. Since this case I have seen several. In 1889, in a boy of six years, with a large swelling of the right submaxillary gland, a calculus the size of a grain of rice was found by an incision in the mouth about a half inch behind the orifice of the duct of Wharton. Three days afterwards the gland returned to its normal size.

The writer states that swelling of the lymphatic glands at the angles of the jaws, but especially of one or other of the submaxillary glands, are not uncommon during the approach of the first permanent molars, and is sometimes attended by general debility. "Scrofula does not enter into the question as an essential." Free lancing of the gums over the appearing teeth appreciably diminishes the swelling, and recovery ensues.

GYNÆCOLOGY.

BY A. H. BUCKMASTER, M. D.,

Assistant Surgeon to the Woman's Hospital in State of New York.

THE CORPUS LUTEUM OF PREGNANCY IN NON-PREGNANT WOMEN.

Dr. Barton Cook Hurst (Med. News, April 5; 1890) states that he has seen two cases that might come under this heading: well-developed corpora lutea, exhibiting all the macroscopic appearances of these bodies at the period of greatest development in a pregnant woman, and yet situated in ovaries taken from women beyond a doubt not pregnant. He thinks the difference between true and false corpora lutea is the result of different degrees and duration of congestion. The presence of over-grown corpora lutea in the ovaries does not constitute an indication for their removal. "This naturally it should never do, and yet oöphorectomy has been advocated for 'endothelioma of the ovary' (Dr. M. A. D. Jones), which to my mind is nothing in the world but the proliferating cells of the membrana granulosa in ruptured Graafian follicles engaged in the formation of corpora lutea."

HYDRASTININ IN UTERINE HÆMORRHAGE.

Dr. Edmund Falk (Archiv f. Gyn., Bd. 37, 2d part) has administered the muriate of hydrastinin to twenty-eight cases of uterine hæmorrhage from various causes.

In three cases of congestive dysmenorrhœa with excessive flow, the results were most excellent. In one case, five days before menstruation was due, a daily hypodermic injection of about three-quarter grain (.05 grm.) was given, and at the beginning of the discharge the dose was increased to $1\frac{1}{2}$ grms. The period lasted about three and one-half days, and was absolutely painless; whereas previously they had always been very painful, and continued from six to eight days.

In another patient, who for more than twelve years had menstruated twice each month, the flow continuing with great pain from eight to twelve days, menstruation was postponed for three weeks after beginning the injections of hydrastin.

In nine cases of hæmorrhage from metritis and endometritis, the treatment was successful without exception.

Four cases, in which bleeding was caused by disease of the anexa, parametritis, pyosulpinx, etc., were also promptly relieved by the treatment.

Nine cases of hæmorrhage from uterine myomata were treated with success in each case.

Falk concludes from his studies that hydrastinin is a sure remedy against uterine hæmorrhage; that it is of especial value in cases of congestive dysmenorrhœa and in menorrhagia in virgins; that, in myomata, hydrastinin will control the hæmorrhage; and that the result is less sure in bleeding from chronic metritis, and is very uncertain in cases of neurotic origin.

The author employs a ten-per-cent. solution of the salt in water, and usually injects half a syringe-ful (.05 grm.) twice weekly. In five hundred injections there was no abscess and rarely irritation. It is important that hydrastinin, and not hydrastin, be used, as, according to Falk, the latter is a powerful cardiac depressant.—*Medical News*, April 12, 1890.

VAGINAL HÆMORRHAGE OCCURRING IN AN INFANT.

Dr. H. C. Fairweather (*Courier of Medicine*, March, 1890). On the second day after birth quite a severe hæmorrhage occurred from the vagina. Waiting in vain for twenty-four hours for it to discontinue, the doctor used instri-^{ngent} injections, with a good result, but the hæmorrhage recurred for several days. Finally there came away a growth three-quarters of an inch in length by one-quarter to one-eighth of an inch in its greatest diameter. From that time there was no further hæmorrhage.

FUNDAL ENDOMETRITIS.

Dr. Graily Hewitt said, in a recent discussion, that the subject of "fundal endometritis" embraced a consideration of fundamental uterine pathology. The causes of congestion of the uterus had to be regarded. The most common causes were associated overfulness of the mucous membrane recurring month by month, general systematic feebleness of circulation, and, locally, sluggishness of uterine circulation, due to displacement and flexion of the organ. The latter condition, though not essential, was very frequent. The presence of discharge from the interior of the uterus might have two sources, the uterus itself or the Fallopian tubes. The recently acquired knowledge as to the greater frequency of Fallopian accumulations added to the difficulty of diagnosis of the discharge. The discharge as a rule closely followed the menstrual period, and resulted often from slow oozing of secretion, a sort of continuation of menstruation, which gradually passed off, leaving the patient free perhaps for a few days.

He believed the best treatment for these cases was to establish free drainage of the uterus. This principle agreed with the one advocated by Dr. Routh of dilating previous to internal uterine medication. His view was that the value of intra-uterine treatment, which he considered

necessary in some few cases, depended largely on the incidental dilatation, whereby drainage was established. The cases of polypoidal or fungoid endometritis required separate consideration. He related a case where a young lady was affected with severe metrorrhagia and discharge, and fungoid growths were felt at the internal os; the uterus was very large, anteflexed, and the seat of great pain: malignant disease had been diagnosticated. As a preliminary to removal of the growth, vaginal douches and rest in bed and elevation of the uterus were employed. On proceeding to operate it was found that the fungoid condition had disappeared, showing the condition was one of simple congestive hypertrophy of the mucous membrane. The result was perfectly satisfactory. This was perhaps an extreme case, but he regarded it as very typical.—*Archives for Gyn.*, March, 1890.

PERCHLORIDE OF IRON FOR LEUCORRHŒA.

Of all remedies for simple leucorrhœa, the old tincture of perchloride of iron is the best, combined with hyoscyamus, opium, hop, or Indian hemp, when the mucous membrane is in a state of irritation. Tepid or cold water injections, cold hip-baths, etc., are useful local applications, with rest; and avoidance of occupations involving prolonged standing or pedal exercise.

Sometimes tannin, zinc, or alum are valuable additions to the injections. When the discharge emanates from the glands of the os uteri, local applications of belladonna and bicarbonate of potash are serviceable, two ounces of tincture and a teaspoonful of the alkali to about a pint of water.—(Ed. in *Phar. Era.*)—*Archives for Gyn.*, March, 1890.

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

ON LEPROSY.

In the issues of the London *Lancet*, from January 18th to February 1st, 1890, inclusive, several articles, etc., on the subject of leprosy have appeared, which, though disconnected with each other, are valuable, as being connected with the great present interest in the subject.

On page 136, of the number for January 18, 1890, may be found a report of the meeting of the Epidemiological Society, in which some

interesting statistics are given, and conclusions derived of, and from leprosy, as occurring in the Punjab District, Hindoostan; also, on page 147, of the same number, will be found the report of a banquet (at the Hotel Métropole, London), at which was present and spoke Jonathan Hutchinson, whose remarks on any subject are always worth reading, and whose conclusions, as there, are as usual sound and full of sense.

It may also be noted, among other things, that he (Dr. Hutchinson) still defends his theory or hypothesis of the causation of leprosy by diet, and particularly fish-diet, (this of raw and partially decomposed fish); he points to the greater prevalence of the disease in coast countries, and districts thereof, or of the neighborhood of large rivers and lakes, in support of this ingenious, if not altogether accepted theory. His latest utterance on the subject may be found in the *Friends' Quarterly Examiner*, No 93, an English publication, according to authority of *Lancet*, March 15th, page 615.

The *Lancet*, March 8th, page 581, also contains a letter of interest from a Mr. Dutton, giving an extract from the will of Thomas Dutton, Bishop of Exeter, England, proved September 21, 1307, in which, among the three hundred different legacies, he leaves thirty-nine of the number for the benefit of lepers, then lodged at a corresponding number of towns and hamlets in his diocese, which appears to have covered Devonshire and Cornwall. The population in this extreme western part of England, as might fairly be supposed then, as now, depending largely upon fishing for gain, and food.

Of great clinical value is a summarized translation (*Lancet*, Jan. 25th, p. 187), by Dr. G. Lindsay Johnson, F.R.C.S., of a paper by Ed. Kaurin, M.D., chief physician to the Hospital for the Romsdal District, Molde, Norway; at which hospital, according to the author, ninety five lepers had been admitted since 1881; out of this number forty-eight had acquired the disease—that is to say, as far as the most searching investigation had been able to discover, no previous leprotic case had occurred in their direct families.

In all these forty-eight cases he shows by history that there had been the closest personal contact. He italicises the following: "I, for my part, am convinced that it is very seldom that we can find a leprous patient whom we cannot trace to have had intercourse with other lepers," meaning doubtless by this that the disease is acquired by the very closest personal contact, or direct inoculation. His series of histories are extremely interesting in this connection.

THE ETIOLOGY AND TREATMENT OF SYCOSIS.

Rosenthal, Berlin (*Deutsche med. Wochenschrift*, 1889, No. 15, p. 459). He gives a number of theories for its causation on the upper

lip, etc., as of the hair being too large or many for the follicle, or hypertrichosis or polytrichosis; he says that catarrhal conditions of the nose, whether in strumous subjects or others, are a frequent cause (see article in *New York Medical Journal*, by S. Sherwell, Oct. 19, 1889), but says there are other, and more obscure causes, and that then sometimes it is impossible to discover to what this condition is due.

He gives no radically new suggestions as to treatment.

BACTERIOLOGY.

BY B. MEADE BOLTON, M.D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

CONTRIBUTION TO THE STUDY OF IMMUNITY.

Dr. Hans Leo (*Zeitschrift für Hygiene*, bd. vii., heft 3) tested the effect of pathogenic organisms upon immune animals suffering from artificial diabetes. As it is the universal experience that persons suffering from diabetes are very subject to tuberculosis of the lungs, as well as other bacterial diseases, L. tries to discover whether by the production of mellituria, animals which are ordinarily insusceptible may be made so. He holds that it is a chemical process in all cases, which accounts for immunity, *i.e.*, the presence of some substance which destroys the bacteria. He bases this opinion upon Koch's and others observations that the normal gastric juice kills bacteria which are introduced through the mouth, and upon Buchner's observation that the serum of the blood acts as a disinfectant. L. regards it as immaterial whether the micro-organisms are destroyed inside certain cells (Met-schinkoff) or outside (Baumgarten, Flügge, Nutall and others) the process in both cases must be regarded as chemical. On the other hand, L. thinks it probable that the presence of certain other chemical substances in the animal tissues, renders the animal more susceptible, and accounts for the susceptibility of diabetic patients by the presence of sugar in the organs and tissues. L. caused diabetes in his animals by administering phloridzin and then inoculated with micro-organisms, to which the animals are insusceptible.

Experiments with anthrax were made upon rats. These animals, as is well known, are insusceptible to anthrax. The results were negative; rats to which phlorizin was administered were no more susceptible than those animals are ordinarily.

Some of the experiments with tubercle cultures upon house mice were more satisfactory. House mice are not at all susceptible to

tuberculosis under ordinary circumstances, but L. succeeded in producing a swelling of the lymphic glands nearest the seat of inoculation in mice to which he administered phlorizin. The mice for the most part died from the effects of phlorizin before fourteen days, but those which outlived this period were affected with tuberculosis of the lymph glands. Guinea-pigs, which are quite susceptible to tuberculosis, did not seem to be made more so by the administration of phlorizin.

Experiments with the bacillus of glanders gave very striking results. White mice are insusceptible to glanders under ordinary circumstances. In all, forty-nine white mice were fed with cakes saturated with 1-20 solution of phlorizin in alcohol. The cakes were first allowed to dry in order to drive off the alcohol. The mice were inoculated with pure cultures of glanders bacilli, and then fed on these dried cakes. Of the forty-nine mice treated in this way, forty-seven died of glanders. Forty-eight mice inoculated with glanders cultures without the administration of phlorizin all remained perfectly healthy. The control mice fed with phlorizin without inoculation died, but they remained alive much longer than those which were inoculated. The former lived two or three weeks, whereas the latter died in three to nine days.

It is evident that white mice lose their immunity from glanders when they are dosed with phlorizin. L. holds that whether this result is brought about by the production of sugar or not, it must be caused by some chemical change in the tissues.

PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.,

Associate Director of the Department of Physiology and Experimental Therapeutics,
Hoagland Laboratory, Brooklyn.

REGULATION OF OXIDATION IN THE TISSUES BY THE NERVOUS SYSTEM CONSIDERED IN RELATION TO THE SIZE OF THE ANIMAL.¹

Richet finds that dogs of different sizes conform to the law of Regnault and Reiset for different animals of different sizes.

[Regnault and Reiset's law is that the chemical activity in gaseous metabolism per pound of weight of living tissue, is inversely as the size of the animal. For example, two dogs of 50 lbs. each will present more skin and lung surface than one dog of 100 lbs., hence each pound

¹ Regulation par le système nerveux, des combustions respiratoires, en rapport avec la taille de l'animal, by Charles Richet, *Comptes Rendus, Acad. des Sciences*, July 29, 1889 p. 191.

must make more heat to keep the temperature of the dog up to normal.—REV.]

Richet finds that the amount of oxygen consumed and of carbon dioxide given off is strikingly similar in different dogs, when considered in ratio to their surface exposed to the air. Under the influence of large doses of chloral, this relationship is lost, and we have, roughly speaking, about the same amount of chemical activity per kilogramme of dog, in all dogs, whether they be large or small. The author emphasizes the control, by the nervous system, of the chemical activity and the production of heat in the tissues, and points out that when the central nervous system is under the influence of chloral, it can no longer cause increased heat production as required in the tissues, and the temperature falls about thirty per cent. in large dogs, and as much as seventy per cent. in small dogs, owing to the relatively larger surface in the latter from which heat is lost.

COMPENSATING HYPERTROPHY OF THE SUPRA RENAL BODIES.²

Dr. Stilling worked on young rabbits, and found that upon extirpating one supra-renal body the other hypertrophied as much as seventy-five per cent.³ If a portion of a supra-renal body is left in situ, it will grow to its natural size and be of normal structure. After extirpation of a supra-renal capsule, then often develops secondary glands like the supra-renal bodies in structure. These may develop anywhere along the cava in the neighborhood of the kidneys. From these facts the author draws the conclusion that the supra-renal bodies have a function to perform in post embryonal life, and are not simply remnants of ancestral history, or at most, of use to the embryo.

EFFECT OF LIGATING THE HEPATIC ARTERY.⁴

The ligation of the hepatic artery has been made by former investigators to study its effect on the secretion, but the authors claim that they are the first to make a study of the effect of such ligature upon its glycogenic function. Kottmeier and Kütke have observed a suppression of the secretion of bile, and Cohnheim and Litten have found a veritable necrosis to follow a ligature of the hepatic artery.

Arthaud and Butte have made five experiments on dogs, and each time have obtained an identical result. The operations are all made with antiseptic precautions, and the animals recover rapidly from the effects

² Ueber die Compensatorische Hypertrophie der Nebennieren, by Dr. H. Stilling, "Virchow's Archiv., 1889, vol. 118, pp. 569-5575.

³ Compare experiments 6 and 15.

⁴ Note sur les effets de la ligature de l'artère hépatique, by Messrs. Arthaud and Butte, Comptes Rend, de la Société de Biologie, Dec. 6, 1889, pp. 674 676.

of the operation. They remain pretty active for three or four days, and eat a little porridge (*soupe au lait*). At the end of the fourth day, they become restless, grow weak, and rapidly give out, dying on the fifth or sixth day. Examination of the liver made immediately and some hours after death, show a "total absence of glycogen and glucose. The cause of death is apparently the cessation of the glycogenic function of the liver.

[The results of these observations with those of Cohnheim and Litten, all agree in supporting the view which is daily increasing among physiologists, that the portal blood brings material for the liver to work on, while the blood from the hepatic artery is more important, though much the smaller supply, in that it maintains the life of the liver cells. Tying the portal vein does not cause death in any such fashion as Arthnaud and Butte have found for the hepatic artery.—REV.]

MISCELLANEOUS.

AWARDS OF THE BROOKLYN HEALTH EXHIBITION.

The Local Committee of Arrangements of the American Public Health Association has made the following awards to the exhibitors at the Health Exhibition which was held in Brook'lyn in October and November, 1889.

TESTIMONIALS.

American Washable Wall Paper Company, Deckertown, N. J. For Wall Papers that Wash and contain no arsenic.

Edward Atkinson, LL.D., Boston, Mass. For Aladdin Cooker and Aladdin Oven.

Backus Portable Steam Heater Company, New York. For the Backus Patent Portable, Open, Reflecting and Steam Radiating Heater.

Connolly Manufacturing Company, Brooklyn, N. Y. For Connolly Patent Globe Trap and Hopper Clamps.

John Cooper, Brooklyn, N. Y. For Vitrified Salt-glazed, Self-centering Sewer and Drain Pipe.

Dermigny & Company, New York. For the Family Ice Machine.

Durham House Drainage Company, New York. For the Durham System of House Drainage.

Joseph Guy, New York. For Guy's Coronet Water-Closet System—for out-door use.

Henry Huber & Company, New York. For Indurated Fibre Bath-Tub.

The Dr. Jaeger Sanitary Woolen System Company, New York. For Pure Woolen Clothing.

Lewis G. Janes, M.D., New York. For Health Lift.

Mark's Adjustable Folding Chair Company, New York. For Adjustable Parlor, Library, Reclining and Invalid Chairs.

McKesson & Robbins, New York. For Chemicals, Laboratory Apparatus for Health Officers, and Sanitary Goods.

E. Merck, New York. For Rare and Valuable Medical Chemicals Illustrating Modern Progress in Medical Chemistry.

Miss C. N. Neal, New York. For the Neal Improved Infants' Portable Bath-Tub.

J. J. Powers, Sanitary Engineer, Brooklyn, N. Y. For Plan of Sewage Disposal Works.

Rochester Sewer Pipe Company. Otis & Gorsline, Rochester, N. Y. For Highly Vitrified Salt-Glazed Sewer and Drain Pipe.

Seabury & Johnson, New York. For Antiseptics and Sanitary Spit-cups.

A. G. Spalding & Brothers, New York. For Gymnastic Apparatus and Anthropometric Instruments.

Rushville School Furniture Company, Rushville, Ind. For School Furniture.

C. B. Tefft, M.D., Utica, N. Y. For Family Garbage Burner.

Warner Brothers, New York. For Dr. Warner's Health Under-wear, Manufactured from Camel's Hair and Natural Wool.

George H. Warner, New York. For the Engle Fire Closet, for the cremation of garbage and other obnoxious substances.

Wells Rustless Iron Company, New York. For Rustless Wrought-Iron Steam, Gas, and Water Pipe.

W. Scott West, New York. For Plan of Filtration and Water Purification—the West Elevated Filter Beds.

Wilmot Castle & Co., Rochester, N. Y. For the Arnold Steam Cooker and Steam Sterilizer.

HONORABLE MENTION.

Armour & Co., Chicago, Ill. For Armour's Extract of Beef.

Boynton Furnace Company, New York. For Gas-tight Self-Cleaning Furnace.

Theodore Bury, Cleveland, O. For Window Ventilator.

Bush Manufacturing Company, New York. For Bovinine.

Cibil Company, Boston, Mass. For Cibil's Fluid Beef Extract.

DuBois Manufacturing Company, New York. For McClellan Anti-Siphon Trap Vent.

Echo Farm Company, Litchfield, Conn. Echo Farm Products, Milk and Butter.

Franco-American Food Company, New York. For French Soups and Biardot's Soups for Invalids.

Daniel Green & Company, New York. For the Alfred Dolge Felt Shoes and Slippers.

Mrs. L. Higham, Brooklyn, N. Y. For Health Waists.

Henry Huber & Company, New York. For Boyle's Patent Pneumatic Water-Closet.

P. H. Kahler & Sons, New York. For Boots and Shoes made on Hygienic Principles.

Thomas Leeming & Company, New York. For Nestle's Swiss Milk and Milk Food for Infants and Invalids.

Malted Milk Company, Racine, Wis. For Malted Milk for Infants.

Maltine Manufacturing Company, New York. For Maltine.

J. A. Missud, New Orleans, La. For the Missud Sewer Pipe.

Murdock Liquid Food Company, Boston, Mass. For Murdock Liquid Food.

Myer's Sanitary Depot, New York. For Siphon Water-Closet "A. G. M."

Patent Cereal Food Company, New York. For "Rex Wheat" Cereal Food.

Red Cross Section, Brooklyn, N. Y. For Completeness of Paraphernalia.

Reed & Carnrick, New York. For Peptonized Cod-Liver Oil and Milk and Beef Peptonoids, and Infants' Foods.

Richardson & Morgan Company, New York. For Improved Combination Heaters—Steam and Hot Water.

W. D. Van Duzer, Minneapolis, Minn. For Minnesota Sewer Flusher.

OPERATIONS ON THE PROSTATE.

Dr. Wm. T. Belfield, 612 Opera House Building, Chicago, Ill., U. S. A., respectfully solicits information concerning unpublished cases of operations upon the prostate, especially for the relief of the so-called hypertrophy of the organ.

THE BROOKLYN MEDICAL JOURNAL

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ORIGINAL ARTICLES.

THE SISTERS OF THE POOR OF ST. FRANCIS: THE NEW ST. PETER'S HOSPITAL IN BROOKLYN.

BY HENRY CONKLING, M.D.

The principal square in the German city of Aachen (Aix-la-Chapelle) is called the Münster-Platz. From this square there radiate seven short streets, connecting it with the busy thoroughfares beyond. The narrowest of these streets is called the Kleinmaschier. In it, about one hundred yards from the square, is the unassuming entrance of an old convent. Indeed, the door is so placed that it might easily be passed without being noticed. This door opens into a long and narrow corridor, at the end of which there is a small waiting-room for visitors. The windows of this room look out into an old garden, which is in the form of a quadrangle. To the left are seen the cloisters; to the right and in front are the different wings of the convent; in the distance one can see the many gables of the Münster of Charlemagne, from which the clang of the Cathedral bell may be heard. Everything about this convent bears the stamp of age. The pictures in the cloisters are imperfect; their color is blurred; the pillars are covered with ivy and moss; and the very garden-flowers that wave in the summer wind seem to belong to a time long ago. When the guide takes the traveler to the "Lousberg" and shows the wonderful landscape which opens for

miles around, one can, by searching for the Münster Tower, see close to the old Cathedral the Convent of St. Clara, in the very midst of a busy city, yet so situated as to be removed from its noise and bustle. The choice of the convent building for the work it does seems most fitting. Its age gives it the dignity which a "Parent House" should possess, for this is the head of an order, young in years, yet marvelous in growth and development. It is the pulsating heart from which streams of energy and action go out to cities far away. It is the centre of a wonderful working order. It organizes and controls the destinies of institutions in two lands, for in this old convent the members of a hospital order receive their first instruction in their life's work.

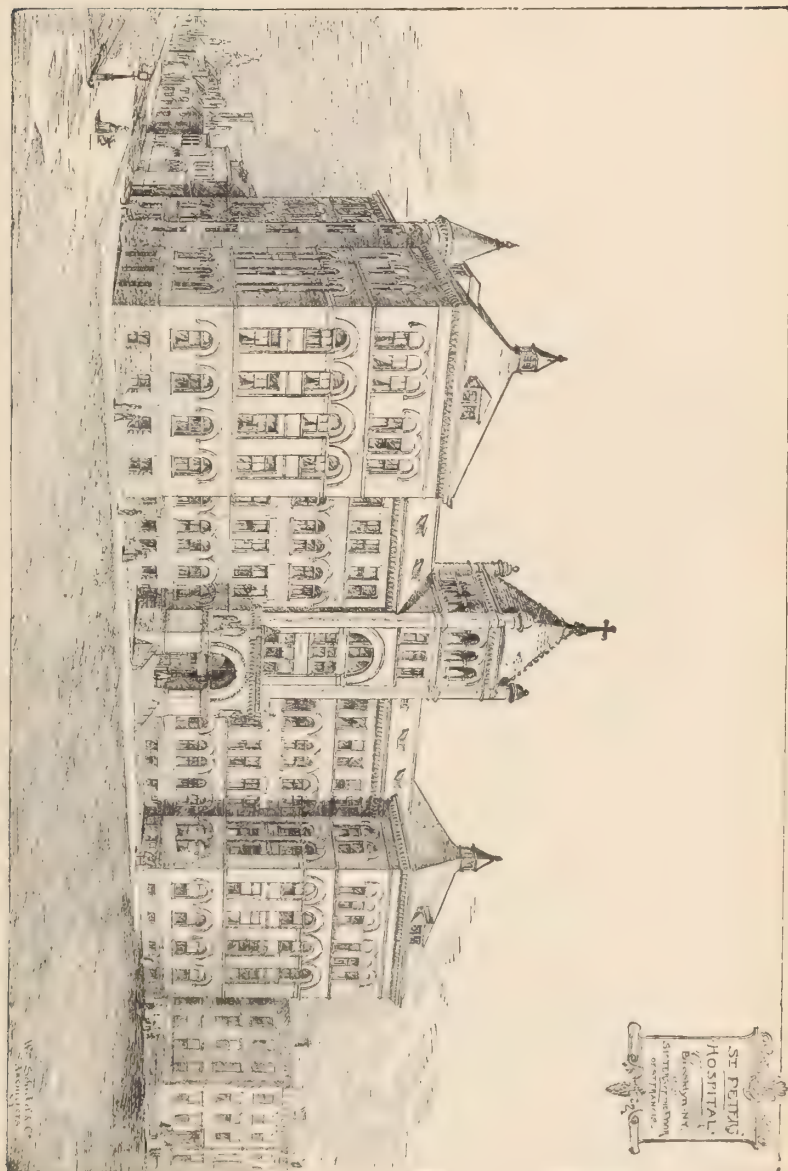
In the city of Aix-la-Chapelle, about fifty years ago, there occurred an epidemic of cholera. In order to work among the sick and the poor, a wealthy young lady, Francisca Schervier, associating with her a number of her friends and securing a small house, commenced her hospital work. In this work she spent her entire private fortune. In time the attention of the government was directed to the hospital and its aid secured. When the epidemic ceased she still continued her hospital, and in about five years she founded the "Congregation of the Sisters of the Poor of St. Francis." *Its object was to care for the poor and the sick.*

The Convent of St. Clara was secured as the "Parent House." The Reverend Mother of the order died in 1876, but so well had she worked in Germany and this country, and so unceasing had been her efforts, that to-day, forty-five years after she founded the order, on its books are found the names of thirty-four hospitals in Germany and fourteen in this country. Her conception of her work has been followed. Her little band of followers has been multiplied many times. In the convent are one hundred and fifty Sisters, who are sent from time to time to the various hospitals. It is a great order—a perfect unit. The Sisters are changed from place to place; none knows when a summons may come calling her to some distant city. But the work everywhere is the same. It matters little where it is carried on. There is a Provincial House in Cincinnati, which directs the American branch.

In 1864 the order established a hospital in Brooklyn, where for twenty-six years its work has been carried on. Twelve years ago the idea of having larger accommodations arose, and in January of this year the first patient entered the New St. Peter's Hospital. The fact of its having accommodations for three hundred patients at once tells its size. The visitor will be impressed by the huge dimensions which tell how large was the thought that made the plans.

The hospital is situated in Henry Street, taking one-half of the

THE NEW ST. PETER'S HOSPITAL.



square bounded by Henry, Hicks, Congress, and Warren Streets. It has a frontage of 220 feet. From either end there is a wing of 92 feet. In the centre, opening directly off the main corridor, is the extension serving for the chapel and the home for the Sisters. The building proper consists of four stories, a basement, cellar, and attic.

A flight of ten stone steps leads to the main entrance. The doors are of antique oak, and bear a sign reading: "Sisters of the Poor of St. Francis." On either side are windows. These doors open at once into a commodious apartment, half vestibule, half room. The floor here is of tiling. Beyond this are other doors and a short flight of steps leading to the main corridor, which runs the entire length of the building, having a width of about ten feet. To the left are offices, waiting-rooms, the drug department, and the male operating-room, a large, commodious apartment, lighted from above; an anæsthetic-room adjoins. At the end of the building are the physicians' and surgeons' suite of rooms and the analytical room. To the right of the entrance are the private rooms, large and handsome, being finished in antique oak. The corridor is lighted by gas-jets placed at intervals of about twenty-five feet.

At either end of the building, running from basement to attic, are a series of bow-windows, being the end of the corridors and the landing of the stair-cases.

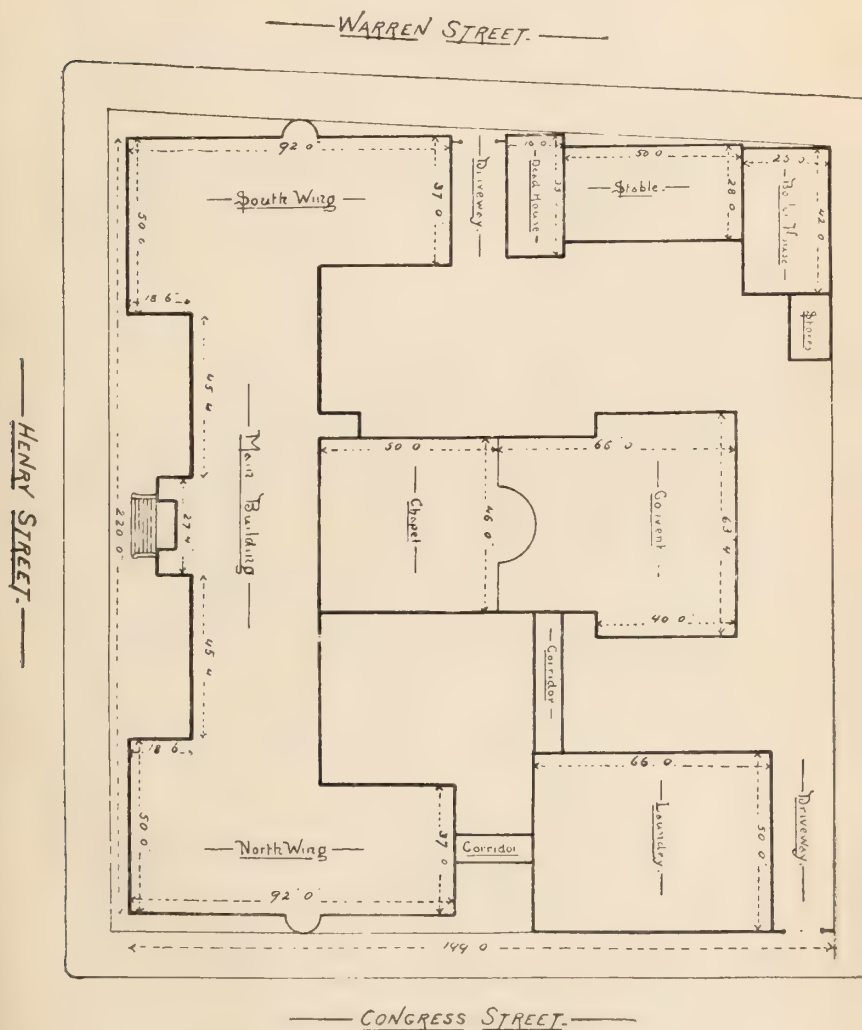
In the basement are four strong rooms, about nine feet square, with padded walls. All ambulance cases are admitted at the Warren Street gate. A corridor leads from this entrance to the elevator, situated conveniently near.

The dead-house contains two rooms. The floors are tiled; the ceilings lofty; ventilation and light come from above. A reference to the diagram will show that the dead-house is not connected with the main building.

The furnaces are four in number. They consume about three tons of coal daily. Arrangements have been made for completely changing the air of the entire hospital at any time and to any extent. This changed air is simply fresh air, heated or not, as occasion may demand. Two cold-air boxes enter a depressed room, under the main entrance. Here are two stacks of heating-irons, having 3,000 c. feet of surface. Below them are two twelve-foot fans, the revolutions of which drive the air into a huge pipe of galvanized iron, covered with asbestos board, felt, and canvas. This pipe runs in a tunnel through the entire length of the building. At stated intervals are branches which lead to other pipes, carrying the new air to all parts of the house. The building is heated by steam.

The laundries have mechanical apparatus for cleaning clothes, and a steam-heated drying-room.

The kitchen is in the basement. In the centre of the room is a long table for keeping cooked articles of food warm. The food, after



cooking, is sent in separate dishes to the diet-kitchens. Here it is dished and sent to the wards. On each floor are two diet-kitchens—one for the female and one for the male wards. These rooms contain refrigerator, warming-table, china-closet, and basin. Through the diet-

kitchens run the supply- and waste-pipes. All of these pipes are in the rooms close to the wall, being easily reached in case of accident.

The wards are well lighted; have high ceilings and perfect ventilation. They are large enough to contain from four to six windows, and have ten to fourteen beds each.

The floors are narrow boards treated with wood-preservative. They take a dry polish. In the corridors the floor is covered with a rubber cloth three feet wide.

The building is constructed of brick and granite. It is fire-proof throughout. The main stair-cases, in the centre of the building, are of iron. Fifteen safety-hose, for use in case of fire, are placed in different parts of the building. Two large tanks, containing an extra water-supply, are in the attic.

The hospital receives only acute cases, excepting consumptives, for whose accommodation fifty beds are reserved. These consumptive cases will be classified according to the amount of disease present, thus giving all cases, in which remedial treatment has a chance of success, the best means of improvement by more perfect surroundings.

St Peter's is essentially a free hospital. In 1889, 1,323 patients were treated. Thirty of these were pay patients. The number of free-day service was 28,449.

The hospital is under the direct management of the Sisters. The idea of its creation was to care for the poor and the sick. To it they may come without money and without price. The poor man who comes to the door is never asked whence he comes or if he has money to pay. The simple question to be decided is, "Is he sick?" If so, he becomes the Sisters' charge. So wide and bountiful is the charity, that many who come for succor receive food and clothing day by day.

The term, free hospital, brings to mind the wonderful institutions that make the London medical world. With three exceptions, the London hospitals are charitable institutions. Brompton spends each year \$125,000. Of this amount, \$25,000 is income from property. The rest must be raised each year. The English public with lavish hand supports all of these institutions. Here, in Brooklyn, is a hospital of three hundred beds. It admits all classes, without respect to creed or nationality. To all classes, then, without respect to creed or nationality, it must look for aid to continue the good work done in the old building and so heroically commenced in the new St. Peter's Hospital.

DISEASE GERMS AND DISINFECTANTS.

BY JOHN G. JOHNSON, M.D.

Read before the Medical Society of the County of Kings, December 17, 1889.

CONCLUDED FROM PAGE 306.

While investigating the question of the transmission of typhoid fever in milk, last year, I found so many authenticated cases in which epidemics of scarlet fever had been caused by contaminated milk, that I determined to devote what time I could spare to the study of the causation of scarlet fever. A brief synopsis of one of these scarlet-fever epidemics, investigated by the London Board of Health, is as follows :

A milkman served his customers between two and four o'clock in the morning. He did not see a single customer: they having their milk-pails fastened on the inside of their iron gates. The milkman had a delivery-pail with a long nozzle, so that he could pour his milk between the bars of the gate into his customers' pails. In one week over eighty families supplied by him came down with scarlet fever. Death seemed to follow wherever he went. In one family, two maiden ladies, one of them sixty years of age, died with scarlet fever. There was no scarlet fever in this part of London at the time, to originate these cases. The milkman's family was healthy. The health-inspector found that the milk had come into the city by rail from about twenty miles from the city. On visiting the farm it was found that one of the dairymaids had had scarlet fever. On the disappearance of the rash she had resumed milking the cows. It was supposed that the desquamating skin had dropped into the milk, causing the epidemic.

Taylor gives a case in which the wife of the farmer milked the cows while attending her son with scarlet fever. The milk was sent by rail into the city. Scarlet fever occurred in rapid succession in the families who used the milk—no communication having taken place between the milk-producer and the consumer.

In another case a railroad-depot had been burned, and the milk, while waiting for the train, was temporarily stored in a basement, where previously there had been scarlet fever. This milk was shipped to the city, and caused scarlet fever in those who used it.

In the *British Medical Journal*, for July 30, 1887: From one farm 120 gallons of milk were sent daily into Edinburgh. Within a week 234 cases of scarlet fever arose among the customers. On investigation

it was found that a young woman on the farm had had scarlet fever, catching it from a young man who had visited her while desquamating.

The view was formerly held that the cause of scarlet fever was a volatile gas that emanated from the sick patient. The tenacity with which the poison of scarlet fever adheres to woollens refutes this theory. The well-known case of Dr. Hildebrand, who was so afraid of carrying scarlet fever from one patient to another that he kept a certain coat to wear only to scarlet-fever patients. This coat had not been used for a year and a half, when one day, for some reason, the doctor put the coat on, he himself contracted scarlet fever from this coat.

In the *Medical Record*, for August 4, 1888, Dr. J. Brooks, of the United States Army, reports a case where a girl, eight years of age, was attacked with scarlet fever. For a long time no possible source of contagion could be found. The child had not been absent from home, she had not been with any one lately exposed, and no other case was known anywhere in the vicinity. Subsequently Dr. Brooks learned that one of the house servants had nursed a case of scarlet fever, in a distant city, about a year before. After the case terminated, she packed some of her effects (including some clothing at that time worn) in a trunk, and left the place. A year later she had this trunk brought to her new place, opened it, and took out the contents, the child being present and handling the things. Very soon afterward the child came down with scarlet fever.

The first case of scarlet fever in the Bahama Islands was in a child who came to the island October 30th, and did not come down with the disease until December 30th of the same year. Investigation showed in this case that the contagion was caused by goods shipped from the Continent.

Numberless authenticated cases like the above can be quoted.

A poison that can cling to woollens for years, and travel across the ocean in them, is not a volatile gas, but a solid, tangible reality.

When you carefully study scarlet fever, its manner of invading the system is much like diphtheria. The tonsil, that absorbent gland, becomes red and swollen; then little white points appear upon it; then the deep-seated maxillary glands become swollen; then little fine, red points show on the skin, which ultimately run together. This all suggested the probability of a germ invading the tonsils, traveling along the lymphatics into the blood and thence to the smallest capillaries in the skin. The lymphatic glands are supposed to act as filters, to arrest the poisons invading the system. Their inflammation would corroborate this theory; and finally, the scarlet-fever germs multiplying rapidly, they differ from diphtheritic germs by invading the blood-vessels, and

finally, carried to the surface, they destroy the skin, which desquamates, carrying the poison to infect others.

When you have severer cases, then you have little abscesses in the tonsil and suppuration of the lymphatic glands of the neck, showing that the pus-germ has been able to invade the weakened tissues and travel along the absorbents, for you never have an abscess anywhere unless caused by the invasion of the pus-germ.

In your malignant cases, where you have sloughing of the tonsil, and of the glands of the neck, the tissues have been so weakened by the invasion of the previous germs that the germs of putrefaction, which are everywhere, have been able to get in and complete the work of destruction already begun.

If this theory, of the causation of scarlet fever, were true, then the germ of scarlet fever should be found not only in the desquamated skin, but also in the blood of the patient, and also in the blood of animals, inoculated with scarlet-fever germ. That the poison of scarlet fever, whatever that poison might be, was in the blood, had been demonstrated long ago by French physicians, who had attempted to mitigate the severity of the disease by inoculating children with the blood taken from children suffering with scarlet fever in a mild form; but those inoculated took the disease so severely that inoculation for scarlet fever had to be abandoned.

Knowing how interminable these investigations are unless you eliminate every possible germ that has no connection with the disease, I began propagating all the germs I could from healthy skin and studying them in their involution forms; and then I began with the skin desquamated by scarlet-fever patients, to see what germs I would find in the diseased skin that could not be found in the healthy skin, and thus, by confining my attention to these germs found only in the diseased skin, I might be able to find the germ that caused scarlet fever. And first I placed my scarlet-fever skin in fresh milk, and put the milk in the incubator and kept it at the temperature of the human body. The next morning a peculiar pellicle had formed on the top of the milk, mingled with the cream. Taking a drop of this mixed cream and pellicle and thinning it down with a drop of water, I placed it under the microscope. In addition to the germs found in healthy skin, I found a micrococcus and also a bacillus that had motion. It did not have the rapid oscillatory motion of the bacillus of typhoid fever; still it was distinctly motile. Placing some of the desquamated skin in nutrient gelatine the next day, the same pellicle was found on the surface of the gelatine, which had been kept at the temperature of the human body. Esmarching my mixed culture, I finally separated the motile bacillus after great difficulty—almost every tube for a long

time breaking down with the molds, which seemed to be on every piece of desquamated skin, and would multiply with wonderful rapidity. That these molds were part of the desquamated skin was evident from the fact that tubes of the same material, prepared at the same time, in which control-tests of the germs of healthy skin were being carried on, did not break down, showing that it was not from laboratory or accidental contamination that the molds were produced.

After isolating this bacillus and the micrococcus, I determined to experiment with this motile bacillus, instead of the micrococcus: because micrococci are invariably found on the tongue in health, and in mixed cultures of the Klebs-Loeffler bacillus, and micrococci are found in the diphtheritic membrane. It is not surprising that we find mixed cultures in these cases, when we consider the state of the tonsils; weakened by the invasion of the disease-germ, they seem fitted for the invasion of these micrococci, which are ever present and ever ready to invade tissues prepared for them.

After discovering this peculiar motile bacillus every time in the desquamation of the skin of more than a dozen different scarlet fever patients, becoming thoroughly interested in the matter, I made extensive investigation of the recent literature of scarlet fever, to see if any other worker in this field had obtained any tangible results.

I found that Drs. Jamieson and Eddington, of Edinburg, had discovered the same bacillus, and had pictured it accurately, but on presenting their paper the bacteriologists of Edinburg, to whom their paper was referred, had reported that these two eminent physicians had mistaken bacillus subtilis, a harmless germ found in infusion of ordinary hay that is allowed to stand for several days, and had given that harmless germ as the cause of scarlet fever. As vivisections are not allowed in Scotland, this opinion was formed from only studying the growth of the two germs in the various media, and their opinion had not been put to the actual test of inoculating into animals, and then opening the animal while alive and seeing if they could recover the germ from the blood of the living animal. This test I determined to follow up thoroughly.

I propagated my bacillus scarlatinæ for ten successive pure cultures, examining with the microscope the growth in each tube to see that it was pure before I inoculated the next tube. Then the hair was cut off the back of a guinea pig's neck and the skin washed with corrosive sublimate, to destroy any germs on the guinea-pig's skin. After the guinea-pig had been placed under an anæsthetic, the skin was cut with heated scissors, and the bacillus scarlatinæ introduced by a Sternberg bulb, and thus my pig was inoculated. In twenty-four hours, my guinea-pig was found with a high fever, the temperature having risen

3½ degrees; the ears were red, and separating the hair on the body, the same redness of the skin was shown. The pig's skin desquamated and I recovered from the skin the same germ. This pig, before he died, had a sloughing away of the walls of the abdomen at a point when he had probably laid in the ether while the operation was being performed. Another guinea-pig was inoculated, and with the high temperature, reddening of the skin and loss of appetite, owing to the carelessness of the boy who had charge of the animals down stairs, my guinea-pig, which had been isolated from the others so as to avoid contaminating them, got with the other guinea-pigs, and the next day all the guinea-pigs were found dead. As it was some hours before I got to the laboratory, I did not deem a post-mortem would positively reveal anything, although the swollen glands of the neck of the pigs showed the probability that they had succumbed to the scarlet fever poison. I determined to recover the germ from the blood of the living guinea pig at the time of the greatest infection if it was there. Accordingly this guinea-pig was inoculated from the human culture, and thirty hours after, when the high temperature and reddened skin showed my pig had scarlet fever, Prof. Kemp kindly made the vivisection. The hair from the chest of the guinea-pig was cut away, the surface washed with corrosive sublimate, the animal placed under ether, and the thorax was opened with a pair of scissors that had been heated red hot to destroy any germs on them. And then a hole was burnt through the right auricle with a red hot knife, and the blood caught. And from this blood the same motile bacillus was propagated. I have also Esmarched the blood from children suffering from scarlet fever, and recovered the motile bacillus. I think it may be fairly claimed after this exhaustive analysis, that the germ of scarlet fever is probably known, and as Dr. Jamieson first pictured it correctly, although he did not prove it, in justice to him it should be named the Jamieson bacillus. The study of the life history of this germ shows beautifully the destructive power of corrosive sublimate. I paint the tonsils and wash the surface of the body with the the solution 1 to 1000, and the cases run so easy a course that it surprises you, when my views have been carried out, there has not been desquamation enough to obtain material to propagate from, and there has not been a second case in the same family. In one case, a beautiful little girl, the mother would not wash the scalp, fearing that the growth of hair would be injured. There was no desquamation of hands and feet, and the only way I could propagate scarlet fever from that child was by collecting fine dandruff, and this readily gave the germ. There has been no albumen in the urine, no rheumatism, and none of the sequelæ so much dreaded in scarlet fever.

In grown persons when the severity with which the disease was

ushered in and the dark, mahogany color of the skin told the malignancy of the invasion, the rapidity with which the skin would brighten up after the hourly bathing of the whole body and the throat, would hardly be believed by those who had not watched the cases. The scarlet fever germ requires an alkaline medium, and the frequent gargling of the throat with vegetable acids in severe cases prevents the invasion by the germs of putrefaction. Anyone who has a good microscope can prove this. Add three parts of good, strong cider vinegar to ten parts of a putrid liquor, as putrefying beef tea, and you have destroyed the putrefying organisms. Brush over the angry and sloughing tonsils with a solution of equal parts of vinegar and water and see the result.

To sum up, scarlet fever is a germ disease, invading the system through the tonsils and travelling along the absorbents into the blood, where it multiplies rapidly, till it penetrates to the capillaries supplying the skin, causing the death of the skin, which carries the poison to others. It requires an alkaline medium to grow in. Destroy all germs in the tonsil with corrosive sublimate, 1 to 1000, gargle with lemon juice or cider vinegar, 1 to 4 of water, to sterilize the throat. Wash the skin with corrosive sublimate, 1 grain to 2 ounces of water, every hour in malignant cases, and after the skin assumes a scarlet color, twice daily. The scalp should also be washed. In this way you destroy the contamination in the skin and prevent almost all desquamation. In the slight desquamation that does occur *the germ is dead*. So that to carry on experiments, I have had to solicit from my professional brethren desquamated skin, where old methods of treatment have been used.

How shall we disinfect the sick room? By disinfection I mean the destruction of the disease germ so that that room shall be as safe to occupy as if there had been no sickness.

Woolens are the great holders and carriers of disease germs. They should be banished as far as possible from the sick room.

Burning sulphur is absolutely worthless as a germ destroyer, because it does not penetrate woolens. It is strange how one master mind will dominate the whole world and everybody will accept his ideas without stopping to think for themselves. It was in this way that the burning of sulphur got its hold on the minds of the public. By burning sulphur, you set free sulphurous acid gas, which absorbs all the oxygen in the air. These germs cannot live without oxygen, therefore this was a sure way of destroying the germs. Health Boards all over the world took up the idea, without investigating for themselves. Everyone who had ever burned a brimstone match under his nose, or seen how quick a whiff of the fumes of burning sulphur would take

away his own breath, was willing to believe that disease germs were equally susceptible. A very pretty theory, but absolutely worthless in practice, because the germs cling to woolens and you cannot make the sulphur penetrate the woolens to destroy the germs. Koch, the great bacteriologist, first showed the worthlessness of this theory. He placed woolen threads in the tubes in which he was propagating various disease germs. The germs would adhere to these threads; he would then hang up these threads in a room and fumigate, by burning sulphur in the prescribed way; afterwards he would place these threads in tubes of various nutrient material and propagate the disease germs from these threads. Koch's report to the German Imperial Board of Health was most exhaustive, and demonstrated the utter worthlessness of this burning of sulphur as far as disinfecting either silk or woolens.

In the Spring of 1888, an epidemic of diphtheria broke out in the New York Infant Asylum and extended into the maternity ward. Prof. Prudden was detailed to take charge of the matter. The ward was closed, and forty pounds of sulphur were burned in this ward; two pounds to every hundred feet of air, or more than twice the quantity directed by our Board of Health. It was burned till the sulphur was all consumed. Then the doors and windows were opened to ventilate the room. Then Dr. Prudden raised a dust from the floor and bedding and allowed the dust to settle on culture media; all other sources of infection were excluded from the ward. The culture media produced so large a growth of microbes that the colonies overlaid each other. Here were bare floors, no carpets to hold the germs, and the test was made by physicians who were anxious to have the work thoroughly done, and under direction of the bacteriologist of the New York Board of Health and for its information, and the burning of sulphur was found to be worthless.

This question was then referred to the ablest chemists, including Dr. Squibb, and their report was that the experiment was faulty because there was no boiling water in the room. Dr. Squibb handles the chemistry of the question so ably that I quote from his remarks: "Formerly when sulphur was burned in closed chambers as a disinfectant, the surfaces were all wetted, and the pot of boiling sulphur was set in water or in wet sand that the heat might evaporate off a constant supply of watery vapor. These conditions are now frequently, if not generally neglected, and when this is the case failure on principle should be the rule. Nearly all, if not all, chemical disinfectants are in a state of tension, ready to change on coming in contact with the matter to which they are applicable, and these changes are by oxidation or deoxidation, and the moment of greatest power or activity is the moment of change, when they by acting on infectious matter pass from

a state of tension to a state of rest under new relations. The agency through which these changes almost universally become operative is the vapor of water. When sulphur is burned in a closed chamber, the dioxide is formed by condensing two molecules of oxygen from the air upon each molecule of sulphur and a heavy gas is the result which tends to settle at the bottom of the chamber and to run out through the cracks. Any moisture present is at once seized by the rather inactive anhydride, first forming sulphurous and then by oxidation from the air, sulphuric acid. The dry gas or anhydride not only siezes with avidity all watery vapor in the air, but also the water held on the surface of all bodies with which it comes in contact. And in the presence of this moisture only is it ready for further oxidation. Then it is by this oxidation that it deoxidizes the matters with which it is in moist contact, filling the surfaces of these matters first with sulphurous acid, then by the change, sulphuric acid, and it is during these changes that its power is exerted. If there be no moisture supplied to the burning sulphur, that which was present in the air and the surface of the chamber is soon used up, and the dry gas remains indefinitely in a comparatively inactive, ineffective condition. The dry, passive anhydride would necessarily destroy all organisms which breathed in any degree, because breathing surfaces are moist. But in embryonic life, protected by shell as in seed, if the shell be dry the gas would be impotent. Many bacteriologists have admitted that burning sulphur would kill bacteria but not germs." Spores, the doctor probably means. Probably no chemist could state better or more clearly the action and supposed efficiency of sulphur as a disinfectant than Dr. Squibb has—but burning sulphur, even with the sulphur in an iron pot, and that pot standing in a dishpan of water, does not destroy the germs, because it does not penetrate woollens, which the disease germs do and adhere to. It does not destroy the spores and the disease can be propagated from the woollens after the most exhaustive fumigations that can be carried on in this way. During the last season I have had the Board of Health fumigate rooms where there had been cases of diphtheria; after it has been fumigated under their direction, I have taken clippings of the wool off from the blankets and propagated diphtheria from these clippings, and proved that it was diphtheria by inoculating a dog with my cultures and producing diphtheria in the dog, followed by paralysis and death of the dog. Patients of mine have had diphtheria, and after the room has been disinfected by the Board of Health, relatives have come on to see them and have slept in the room, because they thought it was safe, and contracted diphtheria in the room. Prof. Van Cott kindly shipped to this country the germ of diphtheria, as it had been isolated and proved to be the true germ,

from Koch's laboratory. I have studied it carefully in all its involution forms, and then put fresh cultures into a piece of paper and rolled them up in a blanket, and put that blanket on a cane-seat chair where the moist vapor of burning sulphur could come in contact with every part of it, had the floors wet and the pot holding the sulphur set in a dishpan of water, and kept the room closed for twenty-four hours, and then taken the blanket out after ventilating the room, unrolled the blanket and propagated the diphtheria germs. This is nothing new. It has been done by the Imperial Board of Health of Germany and by the British Board of Health.

But, it is said, it is easy tear down—what will you give us in its place? This question has already been answered. Koch has answered that question. He has shown that boiling water kills every known disease germ and their spores. He has shown that flowing steam penetrates woolens. He has shown flowing steam, that is as it comes from your steam-kettle at a temperature of 212 F., destroys in five minutes the spores even of anthrax or malignant pustule, and in fifteen minutes, destroys the most tenacious of all spores, that of tetanus or lockjaw. The spore has a tenacity of life far greater than its germ.

Pasteur has shown, that in the still air of a room, all germs fall to the ground. He constructed a box so that he could force disease germs into the air. After a few hours he introduced culture plates in such a manner that germs floating in the air would lodge on them. No colonies formed. Put these facts together: 1st. That disease germs cling particularly to woolens, they are the great holders and carriers of the poison. 2d. That in your house the disease germs fall to the ground, i.e., follow the law of gravity. 3d. Boiling water or a weak solution of corrosive sublimate kills every known disease germ, and what advice would you give your families? 1st. Banish all woolens as far as possible from the sick room; there should be no carpet, no table covers, no covered furniture—only a rug or bit of carpet by the side of the bed that can be boiled or burned afterwards. All blankets and bedding possible should be boiled for at least half an hour. As the child's flannels are especially liable to be contaminated, they should frequently be boiled to prevent reinoculation from them; tell your mothers to get large sizes, for they shrink with frequent boiling. All bedding that cannot be boiled should be sponged over with a solution of corrosive sublimate—1 to 2000. As all germs fall to the ground, all projecting portions of the wood-work should be wiped off with a cloth moistened with corrosive sublimate; so also should every place on which dust can lodge. A dusting-brush should never be allowed in the sick room, because it stirs up the disease germs into the air to reinfect the people. The floors should be washed with a solution of corrosive

sublimate; this has been demonstrated to be the most efficient of all germicides. That people should not drink it by mistake, the London Board of Health uses it as follows: "one-half ounce of corrosive sublimate, one ounce of hydrochloric acid, five grains of aniline blue, three gallons of water." As corrosive sublimate coagulates albumen, the acid is added to prevent that; and the blue color prevents it being mistaken for water. As dirt is the great breeder of the disease germs, the dust between the cracks of the boards should be well wetted to kill those lodged there.

The contagion of typhoid fever is in the stools. These should be disinfected before being thrown down the closet. As before stated, boiling water kills every known disease germ. Three times the bulk of the stool of boiling water kept in contact with the stool for half an hour will destroy all the germs in the stool. It is sure, does not rot the pipes as many disinfectants do.

A new disinfectant is exciting some attention in Germany and England; it is creolin, a product of English coal. It ranks about with carbolic acid. It is superior to carbolic acid and iodiform from the fact that it is not poisonous and does not irritate the skin, and as a surgical dressing it will doubtless, in time, supersede these; as a germicide for the sick room it is valueless in comparison with corrosive sublimate. E. Merck, of William Street, New York, is the agent for it in this country.

After immersing threads on which were the germs of typhoid fever and others, with the Klebs-Loeffler bacillus and others, with the bacillus of scarlet fever, in a ten per cent. solution for thirty seconds all these germs readily propagated. While creolin has an assured value as a surgical dressing, it can hardly be used as a germicide in infectious diseases. As flowing steam penetrates woolens and kills all known disease germs and their spores, the city should furnish a steam plant for disinfecting carpets, and also dry heat for pillows. A room large enough to hang carpets up without doubling should be had, because the more the folds the greater the difficulty of penetrating with the steam. New York City, under the advice of her bacteriologists, has made a start for such a plant.

Educate your families up to these facts, and particularly to the fact that woolens are the great holders and carriers of disease germs, and the question, that Dr. Storr's publicly asked at the meeting of the American Public Health Association, will be answered: "Why do these contagious diseases cling to the homes of the rich so much more than to the homes of the poor?" The winds of Heaven visit the homes of the poor and dissipate these disease germs, which cling to the carpets of the rich.

A FEW OBSERVATIONS ON THE RADICAL CURE OF HERNIA BY SURGICAL OPERATION.

BY T. H. MANLEY, M. D.,
New York.

The great impetus given to operative surgery recently, by the introduction of antiseptics, has not been without making its impress on the surgical management of ventral protrusions, in various situations in the lower trunk.

If, in former times, conservatism was one of the most characteristic traits of the elder surgeons, its contrary is most noticeable in the younger generation of operators; and whether for "better or worse," to day, when we find any portion of the abdominal contents pressing beyond their natural boundaries, we hesitate not to force them back, and close the breach made by their exit, by various surgical measures; which, though somewhat different from each other in technique, have the same object in view, viz: the obliteration of the portal through which the viscus escaped; which is attained through the aid of an uninflamatory exudate; ultimately undergoing fibrous condensation, sealing up, and strengthening what had been, heretofore, defective.

As it is generally admitted now, that the vast majority of cases of abdominal hernia are readily, and rapidly, safely curable, by a simple surgical procedure, it becomes necessary to separate the different varieties; those curable, and incurable; those congenital and those acquired. Besides, in order that we may intelligently approach a case for operation, or condemn another as unfit, it is important that we examine briefly into the causes: the predisposing and immediate.

There can be no question that among the first, a faulty descent or development of the testes is, by all odds, the most frequent. Indeed, I am convinced, from a careful series of observations made on the cadaver and from the faulty anatomical development found in every case in which I have operated, that the testicle is the agent which occasions all the trouble in nearly every case of strangulated or indirect inguinal hernia. It is only exceptionally that this is not so. I am quite sure. The testis may descend into the inguinal canal, and remain lodged there. It may descend partly into the scrotum, and lie anywhere from the inner margin of the outlet to the base of the scrotum.

The testis in its transit downwards, after entering the peritoneal cavity, may contract adhesions with a fold of the mesentery, with the intestine, or with the inner surface of the pouch of peritoneum, the sac, the fascia-propria, the epididymis, or vas-deferens.

It may not even enter the internal ring though a previous slit in the aponeurotic tissues can be discerned, through which its lower fibrous cord, its pilot, the gubernaculum passes on its way to its place of temporary attachment, near the apex of the pubic-arch. This prenatal, foetal type may remain through life, the canal never wholly closing on this strand of fibrous tissue, as it does around the spermatic cord after it has taken its normal position, and hence, a defect remains in the abdominal parietes.

Many cases have been recorded wherein the testis at birth was duly placed, but later entirely disappeared. In some instances becoming temporarily lodged in the inguinal canal, and re-appearing; in others, its habitat becoming uncertain and varied. Probably, in the majority of cases, if after birth, on the appearance of small hernia with imperfect descent of the testicle, no truss of any kind were applied, but the infant kept quiet on his back most of the time, nature would often effect a cure, by sending the spermatic gland well down and closing the canal, completing after birth, what it had imperfectly essayed to do before. But now, at this critical period, a truss is applied, with a view of preventing a further protrusion and effecting a cure—while in many cases it does precisely the opposite. By its constant, painful pressure, it produces an inflammation of the serous laminæ, in which the tender testis is enveloped, resulting in adhesions which will firmly anchor it, and in this manner make a complete and permanent descent of it impossible.

Not infrequently, even when the organ of reproduction surely reaches its destination, the inguinal canal never closes, or rather, there is such a disproportion between the cord and it, that a small fringe of omentum, may insinuate itself between them; and this, in the process of time, through pressure, overcomes the unyielding tension of the transversalis-fascia and fibrous parietes of the rings.

In all cases, in which this impediment to descent is noticed, or that the spermatic canal remains open and the bowel gravitates, the testis is improperly developed, or has undergone atrophy, as a consequence of vascular derangement, or inflammatory changes, attributable to pressure in its abnormal situation; or from being crowded aside by a firm, compact, old omental-hernia.

Other anatomical defects, besides those referable to the testis, contribute their share towards favoring, maintaining, and reproducing hernia. Among the most discernible, and pronounced, probably, is an abnormally elongated mesenteric-ligament. A varicosity of the veins in the folds of this tissue, or an excessive fatty deposit in its meshes, both alike, tending to drag and stretch it; thereby shifting the weight of the viscera, which it supports, from the spine to which they are connected

—not unlike the sail to a mast; to the abdominal parietes; to that region of the belly, weaker anatomically than any other and where in man, in obedience to the laws of gravity, they naturally impinge.

We see many internal serious derangements occasioned by these elongated ligaments, or mesenteries; as when the kidney or spleen have their appendages of abnormal length; the cæcum and its cul-de-sac; the colon, or even the rectum as well.

In the rarer species of rupture, as the direct inguinal and femoral, it is difficult to account for them in many instances; except on the presumption of the existence of structural defect, affecting the integrity of the conjoined tendon and the intercolumnar-fascia.

The sudden development of a femoral hernia is an impossibility. Owing to the manner in which the femoral vessels are invested by a prolongation of the iliac-fascia and the strong fibrous bands given off by the fascia-lata; a protrusion can occur in this situation only after the immediate, exciting cause has been operating over a considerable period of time.

Great varicosity or distension of the femoral vein, a condition so frequently associated with pregnancy, producing enlargement and weakening of the fibrous tissue which invests the vessels, diminishes resistance, and favors hernia. With that, as with other varieties of hernia, I am confident that the predisposing cause dates in nearly all cases from birth, with a very few, if any exceptions.

In the inguinal variety of hernia, the testis must be held responsible, and in the crural, the blood vessels. The treatment of hernia by surgery is palliative and radical; and it often requires a nice discrimination in the use of one's judgment to determine the cases appropriate for the one and the other.

With young children, when the testis is well down in its normal position, accompanied by a protrusion on that side of moderate size, reducible, the truss may be worn with advantage, as a means of retention. Under like circumstances, the truss may be worn later in life, and also by those whose reduced state of health will not permit of operation.

The treatment of hernia by radical methods on an extended scale, was impracticable till within very recent times. It, however, is a very ancient operation, as is borne out by the writings of Celsus, who describes a plan of curing hernia by closing the distorted and disturbed ring, by a plastic operation; by turning a flap of the integuments into the hiatus and firmly sewing it down to the peritoneum.

And so we find Wiseman in England, (Celsus vol. iii., p. 207, 6th ed.) and Ambrose Paré on the Continent, both at the same time, probably, in imitation of others long before them, doing essentially

the same operation, as many are innocent enough to suppose was originated in our own time. They aimed at obliterating the canal and destroying the sac. To secure this end, they employed what was in those times designated the *royal stitch*. It appears to have been an ordinary interrupted suture used for closing in the canal; often they cut away the protruding peritoneal porch. However, the operation soon became unpopular and was discontinued, though the majority operated upon were permanently cured, or died of the operation.

The agonizing pain always endured, when the operative procedures were tedious or difficult, the prospect of having a red-hot iron crowded deeply down into the denuded tissues of the groin, was indeed enough to deter all but the stoutest-hearted from submitting to the surgeon's manipulation.

Add to all this, septic infection, erysipelas in the areola, the fleshy tissues; and subsequent peritonitis; and we can all see what a formidable operation that for the radical cure of hernia in by-gone times must have been. It is only very recently that surgeons have undertaken to cure hernia as a deformity by a free cutting operation.

The results have, so far, been so gratifying that it is hoped that within no distant time, the occupation of the truss maker will be gone, and hernia of every species can be easily, and permanently remedied by the surgeon.

Marcy, of Boston, McEwen, of Edinburg, and McBurney of New York, have each broken ground in this new field. Their operations are in many respects similar; but no one of them can be employed successfully in all cases. McEwen, after freeing the sac of adhesions, folds it up on itself and plugs the canal with it, adhesive inflammation following, a barrier is placed in the way of re-descent. Dr. Marcy aims specially at restoring the obliquity of the canal, and obliterating the sac by the buried suture. Dr. McBurney's operation consists essentially in opening up the canal to the internal ring, where he ligates off the sac, and then sews the cutaneous margins of the wound down to the *sero-membranous* lining of the peritoneal cavity, —commonly designated the fascia-transversalis— and depends on final and permanent closure of the gap by adhesion of all the tissues, and the formation of a solid scar.

No one of these operations will suffice in all cases however, without some modification to adapt it to individual cases. For instance, we cannot imbed the sac into the canal when there is *no* canal, as is always the case in old herniæ, as recommended by McEwen, nor can we ligate off the sac *à la* McBurney, when there is *no* sac, as is the case, with few exceptions, in congenital hernia, or those in which the bowel bursts through its peritoneal coverings, or slips down behind or

one side of them. Nor can we follow Marcy, and *restore* what never existed: an oblique canal. No such canal is known in the direct inguinal or umbilical hernia.

For operations in which it is desirable or imperative to detach diseased or gangrenous omentum, or when a loop of intestine is found mortified, and it is desirable to do a resection and continue the lumen of the bowel by an enterectomy, or lateral anastomosis, McBurney's operation, when it is practicable to do it, seems to me to possess advantages which no other method does. In it, we can thoroughly drain, and have every kind of accidental hemorrhage immediately under control.

In eight operations for *strangulated* hernia performed by myself during the past year, (the first of the series was done January 25, '89), *everyone* of the patients, in whom the bowel was not gangrenous, *survived*, they not only survived the operation, but were radically cured of their hernia. Three succumbed. Of those three, one died in collapse two hours after operation, (first of the series); one, a woman, died on the table; the other and last, a man, in whom was found an enormous mass of diseased intestine, required the resection of something more than a yard of it. In making an autopsy, on the first patient to succumb, we found the bowel as it seemed *ante mortem*, thoroughly gangrenous. He remained in the hospital three days after means to reduce it failed, before he would consent to operation. In the woman who died, she was profoundly exhausted when relief by the scalpel was undertaken. Already the bowel had bursted, and fæcal extravasation occurred, when the sac was reached. In the third case, the operation for hernia was not completed, owing to the shock following enterectomy and ileo-iliostomy. All our other operations for the cure of hernia were successful, nine in number. In age, they ranged from seventy-three years, down to ten weeks.

Hernia is emphatically a masculine disease, as the afflicted are vastly greater in number, in males

The following is a brief summary of my operations for the relief and radical cure of strangulated during the past eleven months:—

FIRST CASE.—E. S., æt. 41 yrs., admitted January 21st, with strangulated hernia on right side. Operation on fourth day of admission. A large enterocele was found; bowel on the border line of gangrene; no sac; testis found atrophied *in the inguinal canal*, and was removed. Result: patient died two hours after return to ward.

SECOND CASE.—J. B., 24 yrs. old, admitted March 23d; diagnosis, strangulated hernia, left side. Operated on day after admission. The testis, intestine, and appendages *were all found lying together in the*

tunica-vaginalis. Another case of absence of a peritoneal envelope. In this congenital case, as the preceding, the testis was found much reduced in size and was taken out. Patient made good recovery, left the hospital cured in five weeks.

THIRD CASE.—Mrs. Mc—, æt. 50 yrs., admitted April 12th, '89, P. M. Operated on at midnight. Diagnosis, strangulated-inguinal hernia. It was seen that though the visible evidence of hernia was recent, yet on dissection, it was found to be an old, incarcerated protrusion, of many years' standing. Patient made a tedious but perfect recovery, with the morbid vent in the abdominal wall hermetically sealed.

FOURTH CASE.—Mrs. R. F., æt. 39, admitted June 27th, '89; diagnosis, strangulated-inguinal hernia. The bowel became strangulated, Saturday preceding, and Monday she applied to hospital for assistance. In going down, to the neck of the sac, and exposing its contents, the gut was found mortified and bursted. She sank rapidly under the anæsthetic, and died on the operating table.

FIFTH CASE.—G. S., æt. 60, admitted October 28th, '89; diagnosis, strangulated-indirect-inguinal hernia, right side. When the sac was reached by Dr. Thomas F. Currie, the house-surgeon, he found a very large protrusion of gut, and believing it to be in a gangrenous state, excised one yard one and one-half inches of it. He had commenced to do an enterectomy, when I reached the hospital. I sealed the divided ends by an enterorrhaphy. The patient was profoundly shocked when I saw him, and hurrying the operation on the bowel to a conclusion, we left the concluding stages of the herniotomy unperformed. He rallied well, and for two days everything seemed to favor his recovery but on the evening of the second day, peritonitis developed and he quickly sank. *Post-mortem* : it was found that the sutures in the bowel had given way, fæcal or intestinal contents having extravasated.

SIXTH CASE.—G. S., æt. 18, admitted September 18; diagnosis, an old incarcerated hernia, becoming strangulated. Operated on day after admission. A very old, thickened sac was found, of large capacity, crowding so firmly against the testis as to push it aside, outwards. Owing to the constant pressure of the hernial contents, the testis had dwindled in size to that of a horse-bean, and seemed from its strained position like something which had developed, tumor-like, on the convex surface of the swelling. In operating, along with the sac, we removed the whole of his spermatic apparatus, outside the ring; then we solidly closed in the breach, which occasioned all the trouble. He rapidly rallied, and left hospital a happy man five weeks after entrance, cured.

SEVENTH CASE.—J. T., æt. 34, admitted October 12, '89. As he was an Italian, but an imperfect history could be elicited. Diagnosis, strangulated hernia, developing gradually. On operating, it was found that the hernia was of the incarcerated variety; an epiplocele, and that in the omental fat, a new growth had arisen which infiltrated in every direction. It was as large as a hen's egg, and extended from the epididymus to, and through the ring, being rigidly bound down to the internal pillar of the external ring. It was carefully dissected away, until the healthy serous membrane was reached, when it was removed *en masse*, and the sac divided, and closed in the usual way. His recovery, and cure of the hernia were most gratifying, though as Dr. Ferdinand Kneer, on microscopic examination pronounced the neoplasm fibro-sarcoma, it is only too probable, that the growth will soon return in the intestinal viscera, and shorten life.

EIGHTH CASE.—A. H., æt. 39, admitted Decembr 2d, '89; diagnosis, strangulated hernia, left side. Had hernia since a child. The protrusion was very large. On operation, in this, as in case second, bowel and testicle, lay side by side in the scrotum, the serous lining of which, formed their covering. There was little serous exudate, the extruded mass, being composed of hypertrophied, and varicosed omentum. This was cut away, the testes spared and the inclosed fascia propria of the spermatic cord closed in, by a modification of the McEwen operation. This man's case was also successful, and a radical cure has been effected.

Besides the eight above enumerated cases of strangulated hernia, I have operated on three other individuals for four herniæ. There are features of a singular and quite unique interest in connection with each of this trio.

The first of this series was an old man seventy-three years old. He had two large, indirect-inguinal protrusions, one on each side for which he had worn a double truss for forty years. Both were operated on, the second operation following as soon as it was considered that the first was successful. They were both of the incarcerated variety. In these hernial operations, McBurney's method was applied with all its detail, with the most gratifying results. The old gentleman says he feels a twenty years younger man since he left his bed, now more than two months ago, and has been able to throw aside his stiff, chafing trusses.

The second case of this group was of a most puzzling and obscure variety. The patient was a lad of six years, in whom his parents noticed a lateral scrotal enlargement since he was an infant. It could not be completely reduced, and with his advancing bodily growth, it steadily increased in size, till at the time of the operation it was as large as an

orange. It was found on operation that his affliction was congenital, that the bowel and testis were not only in one sac, (the tunica vaginalis) but that they had firmly grown together through old fibrous adhesions. With him, we dissected away the whole of the serous lining of the scrotum together with the testis, cutting away and ligating off the pouch, close to the internal ring. He made a rapid and perfect recovery.

The last hernial case was in an infant two months old or more—ten weeks. I did not commence the operation on this tender offspring with a view of doing a herniotomy, and perhaps what we did may be regarded as a manipulation, more as preventive than as curative. The mother while washing him noticed on the right side, that there would be no testicle on one day, and then after a variable period of time, it would come down, to disappear again. I had the youngster under observation one week, before operation, and saw that what the mother said was correct, but that the testis would stop in its ascent upwards just outside the external ring. It was evident here that the gubernaculum testis had not formed adhesion with the inferior border of the tunica vaginalis, and hence permitted it to yield too much to the contraction of the cremaster muscle and the elastic fibres of the cord itself. Hence, I intended to only dissect down to the fibrous sheath of the testis, divide the fibres of the cremaster muscle, draw the testis downward and with a fine kangaroo-tendon-ligature fix it where it should normally repose. Without opening the tunica vaginalis at all I was able to easily bring the testis downwards, though it would at once bound upwards as soon as traction ceased; but I noticed an interesting phenomenon just now which I was not looking for: as with each movement downward of the testis, it was observed that some part of the abdominal contents followed; in other words, that we had a hernia to deal with. Now it was plain what the indications were. Two things should be sought: first, to keep the testis in the scrotum and the viscera in the abdomen. With this object in view, after fixing the testis, I pressed upwards along the spermatic cord the protruding mass until it was within the inner ring, when by carefully isolating the cord I was enabled to close the enlarged sheath above and below, by three fine interrupted buried sutures, after the plan of Marcy. The little one recovered without a bad symptom. As the case was treated by the buried suture little was to be done after operation.

I am well aware that in this last series of cases I am liable perhaps to unmeasured censure for operating on a man at such an advanced age. But I would answer that life and health are as precious to a person of seventy as one fifty years younger.

I fear too, that I may come in for a good share of criticism for

doing anything whatever in the baby's case, for it is generally taught that as the child grows the inguinal canal gains in obliquity, undergoes narrowing and spontaneous closure. In fact, as it is strenuously maintained that hernia in the young is a curable malady or defect, by nature's resource alone, any operation involving the use of the scalpel or loss of blood, would seem a positive mutilation. In answer to this, I would present the *pathological anatomy of every one* of my cases whose lives were imperilled or lost by strangulation. Indeed, from my experience, I am led to one conclusion—that the primary causes leading to hernia, especially the strangulated variety, are practically, always congenital. Admitting this to be the case, now when we inflict no pain and have no fear of septic inflammation following, why deal with them, otherwise than we do with any other blemishes presenting themselves at birth?

Our results in the cases of strangulated hernia were most gratifying. Every one recovered wherein it was found that no serious impediment existed at the time of operation to the intestine's vitality. In our first case, which was fatal, the patient remained in the hospital three days after strangulation developed, and extensive gangrene was found incurred about the bowel. In case four, in the woman who died on the table, no hope could be held out when she had a bursted bowel with extensive fæcal extravasation into the peritoneal cavity. In case eight, our patient died, not from the operation for hernia, which was not completed, but from the exhaustion, etc, incident to an extensive resection of the bowel. I was notified of the admission of this case to hospital very shortly after he entered, and presuming that the house surgeon, a very worthy and competent young gentleman, was desirous of doing a herniotomy, I authorized him to go ahead. As he had seen me do ten or a dozen of such operations, I had no doubt of his ability in the matter. However, an hour or two after I had given permission, I called at the hospital and found the whole house staff (four) busily engaged with the operation. I was somewhat disappointed when I found the operation incomplete, but I was quite confounded when I looked into the field of operation and discovered the doctor sewing something together, about the internal ring, which was freely opened, and glancing downward, I saw a wash basin nearly full of viscera which had been found in the large sac, and which were thought to be gangrenous. On inquiring how much of the alimentary canal had been eviscerated, someone of the spectators facetiously remarked that the stomach was left. On actual measurement it was found that one yard one and one-half inches had been cut away. I now took the case in hand myself, and though the patient was in deep shock, I used every precaution essential to observe in abdominal-surgery, to secure proper

and firm approximation. A couple of deep temporary sutures were applied through the deep rent in the tissues. Our man was in splendid condition for two days without either pain or fever. His bowels opened naturally, and he had an appetite; but on the third day, peritonitis developed and he died shortly after its onset. After death it was found that half an inch below the mesenteric border of the bowel, the sutures had ulcerated through, and permitted of leakage of intestinal contents into the peritoneal cavity.

Such then are the results of active surgical interference in cases of hernia. The above is an epitome of just eleven months' experience in dealing with hernia, especially strangulated hernia, with a view of securing a permanent cure. My first operation being on January 29, 1889, and my latest, December 10th, 1889.

As a result of the experience obtained in the personal management of these cases, and what I can learn by watching the practice of others, along with a thorough and searching study of the modern and recent varied, miscellaneous and abundant literature on the subject of the surgery of hernia, domestic and foreign, I have come to the following conclusions:

FIRST.—That the original and predisposing cause of hernia is almost invariably a congenital defect of development, especially with the male sex.

SECOND.—That a permanent, enduring cure by the aid of a truss, is seldom if ever obtained; on the other hand, that though by its presence, it may occasionally excite adhesive inflammation, which will interfere with the bowels' descent, yet in the majority of cases, when strangulation follows after this delusive cure, the pathological condition present very much enhances the dangers attending this, and it adds proportionately to the difficulties of an operation, for radical cure.

THIRD.—No one operation will do for all cases, but each must be treated according to indications encountered.

FOURTH.—No medical attendant should allow a recent hernia to remain down more than twelve hours if symptoms of strangulation are present, and should of all things avoid severe or protracted pressure, in making taxis.

FIFTH.—Conceding that hernia usually dates from birth, an infant should be examined as soon after birth as possible, and if a condition of the testes is observed, which will later in life, favor hernia, it is imperative that it should be treated as any other congenital deformity, which may lead to years of misery, by immediate surgical measures.

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EDITORIAL.

THE TRAINING OF THE NURSE.

The training-schools for nurses have gotten into the journals, and the indications are that they are likely to stay there for a time. The trained nurse fills an important place. The conditions under which she is trained are vexing the trainers. The critics are rubbing their eyes over the revelations of a training system that seems vicious. Some things have to grow; they cannot be created. The enthusiasm which inspired the lady patronesses and managers in behalf of their sex was a good starter, but now that there are a good many trained nurses and the training-schools are an educational fact, business principles in their conduct are in order.

The "charity" cry, however urgent at first as an appeal, is now a little on the hysterical order. A young woman, whose skill and acquirements can command twenty dollars a week, is hardly an object of charity, and to be educated in a "charitable" institution is not likely to command the approval of a young woman who is independent enough to seek a school where such remunerative skill can be acquired; she, when the facts are fully known, is not likely to seek admission to a training-school, where she is to be held as a "charity" student, where the contract is held to be all on one side and from which she can be arbitrarily and summarily expelled, without a hearing. Certainly a young woman, who would knowingly place herself under such a régime, might well be treated by her managers as a serf and undeserving of a hearing.

A training-school must be in immediate connection with a hospital, and those training-schools have proved most useful to the hospital and to the nurse where the conduct of the school has been under the immediate and exclusive control of the hospital authorities. Friction must result under a bicapital management. The education of the nurse and the control of the hospital should have one responsible head. All who have to do with hospital control, know how great the revolution the trained nurse in the hospital has effected; the contrast with the old experience with orderlies and paid nurses is delightfully apparent.

The theory of her training is, perhaps, not familiar to many outside of those connected with hospital service. The matriculant is of immediate and effective service from the day she enters the hospital. She performs duties under the eye and direction of the second-year nurse in charge of the ward. She receives from the superintendent of the school personal and daily instruction and direction in all the details of nursing as defined in the curriculum of the school. The important duties and grave responsibilities of night service are not allotted to her till the second half of the first year, and in the second year she is sent out to private nursing, where she acquires the experience of undivided responsibility of her relations to the family and the home. In service to the hospital and at private nursing, she is, from the beginning to the end of her relations to the training-school, a source of income to the school. The hospital pays for her service and the private patient pays. In each case she gives a *quid pro quo*. She is never, for one moment, a pauper, a dependent or a "charity" student. The school is her educator and her protector, and the school receives just as much money from the hospital for the services of the nurse who has just entered the school, as for the services of the head-nurse in the ward, and just as much money for the services of the nurse who is sent to her first private case as for the services of the nurse who is just completing her two years' relation to the school. This is unique. There is nothing comparable to this relation of pupil and school in any other educational institution. She is not a pauper nor a "charity" scholar.

MEDICAL JURISPRUDENCE.

It gives us pleasure to announce that Sidney V. Lowell, Esq., has kindly consented to prepare for the JOURNAL, from time to time, a summary of the decisions of the Court of Appeals and other courts, which have an interest for the medical profession. Mr. Lowell's posi-

tion in the legal profession insures the thorough reliability of the interpretation which he will place upon these decisions, and at once establishes confidence in the comments which he will make upon them.

OBITUARY.

WALES LEWIS CARY, M.D.

Dr. Wales L. Cary was born in Boston on the 13th of February, 1861. His father was a cabinet-maker, and shortly after his son's birth moved to the town of East Machias, Maine, where the family were together until the Doctor's sixteenth year, when he went back to Boston to obtain an education. He attended with credit the Boston High School for three years, and then came to Brooklyn, matriculating at once in the Long Island College Hospital, where he pursued his medical studies for the better part of four years. After graduating with honor at the Long Island College Hospital, he served a year's term on its House Staff and then went into general practice, locating on Lafayette Avenue, one door from Sumner, and making there a comfortable home for his mother and two sisters, and his wife. Here he remained until his death, on the 16th of May, 1890.

Dr. Cary was unquestionably one of the brightest, best-posted, and most promising young physicians in Brooklyn. He was a self-made man in the truest sense of the word. He educated himself and supported himself from his sixteenth birthday, often suffering extreme privation and being obliged to practice a most rigorous economy in order to obtain the knowledge he sought. His highest ambition was to be a "thoroughly competent physician." As a man he was a consistent Christian, kind-hearted, generous to a fault, and gentle. As a physician he possessed most of those rare qualities which render the true doctor's entrée into the sick-room sunshine and an inspiration to the sick, while a really keen power of observation and great practical ability in the application of means to ends made his treatments both skilful and successful.

Dr. Cary leaves many friends in all stations of life: the poor will mourn his loss equally with not a few prominent citizens of Brooklyn; and it can be truly said, that he had scarcely an enemy amongst his professional brethren. It seems indeed strange that one so young and promising should be taken in the midst of a successful activity; still

those who mourn his loss may yet be comforted by the bright example he has set to all young men who may come to know of his history, and further by the honorable position he had won amongst the profession of Brooklyn.

Dr. Cary died of leptomeningitis and acute cerebral softening. He leaves a widow and two children, and a mother and two sisters.

RESOLUTIONS.

At a meeting of the Board of Managers of the Alumni Association of the Long Island College Hospital, held May 18th, the following minute in relation to the death of Dr. Wales L. Cary was made :

The Officers and Council of the Alumni of the Long Island College Hospital have heard with great sorrow of the death of Dr. Wales L. Cary, Corresponding Secretary and Treasurer of the Association.

Personally, he has endeared himself to them by his qualities of sterling character, while in the discharge of official duty he has always commanded their uniform confidence and esteem. In the wider field of professional work and achievement he had already by fidelity, zeal and assiduous industry won an enviable record which gave promise of greater eminence as the years should go on. That one so earnest in spirit and so well equipped for usefulness could not longer live to be useful is at once a misfortune and a mystery.

Resolved, That this minute be placed on the records of the Association, and that a copy, signed by the President and Secretary, be sent to the widow of Dr. Cary.

PROCEEDINGS OF SOCIETIES.

BROOKLYN PATHOLOGICAL SOCIETY.

The 313th regular meeting of the Brooklyn Pathological Society was held January 16, 1890, at the Society Rooms. President Dr. John C. Shaw in the chair, twenty being present.

Dr. Louis F. Criado presented a paper entitled, "An Interesting Case of Pyelonephritis Following Displacement of the Right Kidney." [Brooklyn Medical Journal, 1890.]

DISCUSSION.

Dr. J. P. THOMAS.—The kidney certainly presents a different appearance than when I opened the specimen at the autopsy. I made the post-mortem for Dr. Buchaca, late in the afternoon, in a poorly-lighted room. The tumor was very large, had pushed up the liver,

which in turn had pushed up the lungs and crowded the heart over to the left.

When I opened the tumor a large amount of pus escaped, as much in bulk as the specimen now presented; had no idea the kidney proper was so large. The report of the post-mortem was sent to Dr. Buchaca, who did not give it to Dr. Criado because of a personal dispute. My own reason for not replying to Dr. Criado's request for it was out of deference to the wishes expressed by Dr. Buchaca, for whom I made the examination.

Dr. WEST.—I saw the child a few days before its death. I would like to ask Dr. Thomas if he found any large lymphatic glands.

Dr. THOMAS.—Yes, there were several.

Dr. WEST.—I was handicapped so far as history of the case was concerned. I was not able to speak Spanish nor to understand much of the kind of English spoken by those having the child in charge. The little history I did get was that the child had pneumonia, then fell downstairs; had pain in abdomen for a little while; later another fall from baby-carriage. When I saw the child it was about three years old, rachitic; had protuberant abdomen. It was very difficult to get near the patient, who was fearful of being hurt, having been mauled over by so many doctors. Abdominal veins enlarged; mass in umbilical region, which could illy be defined; hectic appearance for a few weeks past and much emaciation. Looking upon the whole picture as presented, I was easily led astray, and I was one who made a wrong diagnosis—"tabes mesenterica."

Dr. CRIADO.—Did Dr. Thomas find the kidney displaced, or in its normal position?

Dr. THOMAS.—In the normal position, though much enlarged.

Dr. Buchaca just entered the room, and was asked if he could give any light on the subject under discussion. Not having heard the paper read, he could not discuss it; but in reference to the kidney, he said: It was never a case of displaced kidney; it was so large it filled the whole abdomen, displacing all organs. It was an immovable kidney.

The discussion was beginning to take a personal form, and Dr. Shaw said: "We want no personalities. If Dr. Buchaca has anything to say about the post-mortem the Society will be glad to hear him, as that is the most important thing to know just now."

Dr. WEST.—The report has just been handed to me by Dr. Buchaca.

"A post-mortem examination held in Brooklyn for Dr. Buchaca, the subject being a child three and a half years of age, revealed the following: Child emaciated; abdomen greatly distended with a tumor, solid, or nearly so, as revealed by palpation and percus-

sion. An incision was made, and the tumor was found to be the right kidney very greatly enlarged and adherent to the back and not movable. The kidney had pushed up the liver, and the latter in turn had pushed up the lungs to the fourth cartilage, so that the kidney extended from the ninth or tenth rib downwards and forwards nearly to the pubes. The normal structure of the organ was replaced by a large quantity of pus, there being only a small portion of the kidney left. The kidney retained its shape. The left kidney was also the seat of a small collection of pus, and was slightly enlarged. The liver was normal in size, but, as before said, was pushed up. It contained two or three very small collections of pus just where it came in contact with the kidney. The pancreas was infiltrated with pus to some extent, being greatly enlarged. The other organs of the body were normal. Dr. Wooley and Dr. Buchaca were present, also some other gentlemen.

“(Signed)

JULIAN P. THOMAS, M.D.

“493 Hancock St., Brooklyn.”

NOTE.—The capsule of the kidney enclosed a large quantity of pus between itself and the substance of the organ, which was lost on opening it.

Dr. CRIADO.—As Dr. Thomas did not see the kidney proper, it is strange that he should report this tumor to be the kidney. When I got the tumor I could not make out anything that looked like a kidney, viewing it from the cut made at the autopsy. Neither could Dr. Tieste nor Dr. B. F. Westbrook. They might have *inferred* it, but could not say so positively until I turned the specimen over and made an incision on the *opposite* side. The original cut must have been made in the pelvis of the kidney, and the masses seen there are fibrin and old blood coagulæ, as revealed by microscopical examination.

Dr. SHAW.—Can Dr. Thomas tell which side of the tumor was towards the back?

Dr. THOMAS.—I was thinking of that. The incision was made from the front as the tumor presented. The capsule was filled out with pus, and took the shape of the kidney. As it was in the place where the kidney ought to be, I decided it must be the kidney. After cutting it open and removing the pus, I swept my hand around in it, and feeling what seemed to be broken-down material, I inferred the substance of the kidney was replaced by pus, so did not look further for kidney tissue. The tumor did look like a kidney in shape, and was adherent in normal position of kidney.

Dr. G. OSGOOD then presented a specimen removed from the skull of a boy fourteen years of age. Case—“Depressed Skull and Epilepsy.”

DISCUSSION.

Dr. I. H. BARBER.—The boy had a depressed wound in head; had epilepsy; muscles interfered with on left side; had very little intelligence. I was disappointed to find a very tense fibrous tissue over the hole in skull. On opening into it, over an ounce of serum ran out. There was no pulsation; probe went in all directions about three inches. I fastened in a drainage-tube two and a half inches in length. A thin bloody serum escaped all the time, but I did not know then that I was draining the spinal cord; thought it was a cyst. Wound healed by first intention, except around the tube. Do not know what killed him; he seemed to be doing well at first. Perhaps Dr. Shaw can tell.

Dr. SHAW.—I made the post-mortem. The case appears to have been originally a fracture. I do not know what caused the hole; it might have been trephined at some previous time; there is little previous history. I hardly know what caused death; might have been due to drainage of the cord.

Dr. OSGOOD then presented a second specimen—"Brain taken from a man forty-five years of age, who died from Hæmorrhagic Pachymeningitis and Concussion."

DISCUSSION.

Dr. SHAW.—The man's mind was clear at night, and there were no symptoms of concussion. The condition of hæmorrhagic pachymeningitis is not uncommon with hard drinkers.

Dr. WILSON then presented a specimen of tubercular nephritis from a child eight years old who died from pulmonary tuberculosis.

The Society then went into executive session. Minutes of previous session read and approved. Reports from officers read and adopted. The following officers were then elected for the year ensuing:

President—Dr. John C. Shaw.

Vice-President—Dr. Ezra H. Wilson.

Secretary—Dr. Frederic J. Shoop.

Treasurer—Dr. May R. Owen.

It was voted to fix the *annual dues* at \$1.00 for the current year.

On motion of Dr. Wilson, the retiring secretary was given a vote of thanks for the efficient and satisfactory service rendered to the Society.

There being no further business the Society adjourned.

R. G. ECCLES,
Secretary.

BROOKLYN SURGICAL SOCIETY.

Meeting of March 6, 1890.

Dr. RAND presented a case of "Fracture of the Seventh Cervical Vertebra."

This patient is thirteen years of age. Last June he fell from a tree some fifteen or twenty feet, falling head foremost and striking upon a wooden bench. The bystanders reported that he fell directly upon his head. The next day he walked to the Long Island College Hospital. The position of his head was then one of extreme flexion, the chin resting upon the sternum. The boy complained of pain in the throat and chest. Upon attempting to extend the head, even to raise it ever so little from the sternum, he complained of severe pain in the neck. Upon examining the spine posteriorly it was found that the spinous process of the seventh cervical vertebra was freely movable. The fracture involved the arch of the vertebra, and as nearly as could be made out, extended through the laminae. From the history of the accident, the position of the head, and the pain in deglutition, it seemed a fair assumption that there was also injury to the body of the same or of some adjoining vertebra, probably a fracture. It was deemed inadvisable to attempt any forcible extension of the head, and he was accordingly put upon a mattress, with the head supported in its displaced position and extension applied from the chin and occiput in the line of the deformity by means of a weight and pulley. As much extension as the boy could bear with comfort was made, the weight was gradually increased from day to day, and the pulley lowered little by little as the head was brought into its normal position. It was my intention after the head was extended to apply a plaster-of-Paris splint to the head, neck and back; but the case progressed so favorably and the boy remained so nearly at absolute rest, that extension was continued until recovery. There was no evidence of pressure upon the cord at any time. The only remnant of his injury to be seen now is the position of the spinous process of the fractured vertebra, which is deviated somewhat to the right of the median line.

Dr. DELATOUR presented a case of "Persistent Salivary Fistula following an Injury to the Parotid Gland. Operation. Recovery."

Patient, male, age twenty-three, single, colored, butler. Admitted to the Methodist Episcopal Hospital, October 8, 1889. Previous general history good. On September 14th he began to have considerable pain about the first molar tooth of the right side. This tooth had been filled about six years previously. Three days later he had it drawn.

The pain became even worse after this and the face began to swell. He then applied poultices, and two weeks ago the abscess, which had formed, broke into the mouth, and was followed by a considerable discharge. A week later an external opening was made, and gave exit to considerable pus, with marked diminution of the pain.

Upon admission to the hospital, the right side of the face is found to be greatly swollen and tender, and there is a small sinus from which comes considerable pus. The pain still persists.

With the patient under chloroform an incision was made from a point a little above the angle of the jaw downwards and then forwards along the body of the inferior maxilla. Upon introducing the finger a considerable area of denuded bone could be felt. The cavity was cleansed and packed with bichloride gauze.

Oct. 19.—Since operation the wound has been dressed daily. The pain has entirely disappeared, but the swelling still remains. Probe detects bare bone at the bottom of wound, but the granulations seem to be covering it in.

Nov. 5.—The wound has closed down to a small sinus. A probe passed through this detects bare bone.

Operation under Ether.—An incision was made at the site of the former one and carried further forward. The bone was exposed, and a large sequestrum found and removed. Considerable necrotic bone was removed with the sharp spoon. The old sinus opening into buccal cavity was found and curetted. Wound packed.

Nov. 19.—There has been considerable discharge, but this is now diminishing. The wound is daily packed with balsam of-Peru gauze containing ten per cent. naphthalin. There is a further necrosis of the bone.

Nov. 22.—Ether. A considerable area of dead bone removed with the sharp spoon. The sinus to the mouth has closed, but the swelling has not decreased any. Since the first operation the patient has been unable to separate his teeth more than one-quarter of an inch.

Jan. 6.—The wound has granulated up so that now only a small sinus remains. Since the last operation considerable discharge of material resembling saliva has come from the wound. This still continues to come from the sinus.

Discharged from hospital.

Since the patient left the hospital I have made applications of silver nitrate and naphthalin to this sinus, endeavoring to close it. A probe introduced would seem to touch nothing but soft granulation-tissue. The discharge of saliva continued, being more at some times than at others, up to Feb. 17th. On this day I introduced a small sinus-curette and thoroughly removed the lining membrane of the sinus, and put firm

pressure on the outside. I then passed a probe into Steno's duct to satisfy myself that it was pervious. He returned again on the 21st and reported that no discharge had taken place since the last dressing, and up to the present time he has had no further trouble. Since his discharge from the hospital the swelling has greatly diminished.

The principal point of interest seems to be the establishment of a persistent salivary fistula by a wound of the parotid gland; the wound not being in any way connected with the duct. It is also a question whether the introduction of the probe into the duct reopened it, or whether the duct were already pervious and the simple freshening of the walls of the sinus and external pressure were sufficient to close a sinus which had persistently refused to heal under the ordinary methods of stimulation and cauterization.

Of course the propriety of a plastic operation suggested itself, but owing to the firm union of the cicatrix to the bone, the fistulous opening being in the centre of this, it was thought best not to make the attempt. The complete return of function after such extensive removal of the bone and the inability to open the mouth for over three months also seems worthy of mention. The swelling has now entirely disappeared, and only a moderate scar remains.

Dr. FOWLER.—I had one such instance in a case in which I removed a tumor of the parotid, in which a small portion of the parotid was left. In this case, as in the case of the colored boy presented, a fistulous opening remained from which saliva escaped, particularly when the patient attempted to eat. It sometimes occurred at the smell of cooking food. His mouth watered, as he used to say, under his ear. And in this case Steno's duct was not wounded, as shown by examination. But after six months it had healed completely. The patient passed from under my observation. About six months afterwards he returned to Brooklyn and called at my office to report his condition. A peculiarity which he then observed was the fact that when he was eating there was always a perceptible moisture, which bore some resemblance to an ordinary local sweating, about the region of the cicatrix from which the tumor was removed, this moisture not escaping from any perceptible breach of the skin. Four years have elapsed, but still this peculiar condition persists.

Dr. WIGHT.—I have several times removed large growths which have not been followed by any disturbance of that kind. I have twice removed all I could find of the parotid gland, and one of those patients is still alive, but nothing of that kind has followed. The other died from chronic disease soon after the operation.

Dr. DELATOUR presented a case of "Compound Comminuted Fracture of the Forearm with Non-union."

This patient works in a rope factory, and on the 7th of January last had his hand caught in some hemp and had his arm pulled into one of the wheels and twisted. There was a compound fracture of the forearm, about the middle, and the bones projected through the opening in the skin. There was also a T-fracture at the elbow-joint. I did it up five hours and a half after the accident occurred. I made liberal incisions and removed some of the fragments, and introduced drainage tubes, which were left in for five days. When they were taken out there were no indications of suppuration. Since his discharge from the hospital he has gradually gained motion at the elbow. The arm at first was put up in a right-angled splint, but there was no union in the forearm until about three weeks ago, when there seemed to be some slight union in the bones. Yesterday, while removing the dressings, in trying to assist me, he lifted his arm, and I heard a distinct crack, and found there was mobility in the bones of the forearm. At the time the accident occurred the muscles of the forearm and everything seemed to be so much torn that it seemed hardly possible to save the part, but he wouldn't consent to anything else being done, and as there was no special danger in making the attempt to save it, I was glad to do so. You see the motion of the elbow now is quite good, but in the arm the union is very slight. The fracture in the middle of the arm was compound, the bone projecting through the skin; the arm had apparently been twisted almost around, and at the point of injury there were a number of fragments, some of which were removed.

Dr. WIGHT.—I would like to make a few remarks in a practical way, and if I had thought that such a case would be brought up, I would have brought a splint, with a double angle and arm-piece and forearm-piece which I have used, arranged so as to put the arm in the position of my arm at the present time.

[Dr. Wight describes the mechanism of this splint.]

And also in connection with this splint I take a piece of wire cloth and fasten it as a door, taking it off from time to time. This gives you an opportunity to pack in the dressing and so prevents a displacement which is likely to occur, externally and internally and backwards and forwards. This gives you a splint which you can remove in sections, part at a time. It is constructed upon anatomical principles, and its practical results are excellent.

Dr. PILCHER.—It is by no means certain but that in this particular case with continued immobilization there may be union. It is only two months yet, and there has been some consolidation, but it has been broken up.

Dr. WIGHT.—I operated upon a case two years ago which had been wired twice. The tissues on the back of the forearm were so far

damaged that there was no muscular tissue left. I made an incision, cut the ends of the bone and wired them, and left them in, and there was very desirable consolidation at the end of a year.

Dr. PILCHER.—How long a time elapsed before firm consolidation began to be shown in that case?

Dr. WIGHT.—Some six or seven months. I despaired of union, but it began to get firm after that, and at the end of the year it was not firm, but quite firm. He got pretty good use of his hand. He had been operated upon so much that the arm was shortened, and the peculiarity about the bones was that both were exceedingly soft; anything less than a good large wire would have cut right through. My impression is that the first time it was wired at St. Peter's Hospital.

Dr. WIGHT presented a case of "Fracture of the Astragalus."

This patient is a native of Brazil, who, upon the first of December, fell from aloft and struck his feet upon the deck of a vessel. Three days after that, at Port au Prince, he saw a doctor, who dressed the injured part in cotton and cordage. On the 5th of February of this year his vessel put into Nassau, West Indies, when a doctor there removed the bone, which I show you, from the inside of the foot. On the 25th of February I first saw him. I have not had the time to study up this case; I present it in a very brief and pointed way as to the leading facts. In fact, I have not had time to analyze it as yet, but I thought as I had been unable to say what I could do, that this might come in as a case to present.

Dr. PILCHER.—"Fracture of the Astragalus, with Dislocation." This man, whose case I beg your indulgence to present out of order for the purpose of comparing it with this other ankle injury, is a brick-layer who, in ascending a ladder, made a miss-step or lost his hold and fell, and was precipitated upon his feet a distance of twenty feet or more. He was very soon afterwards brought to the Methodist Hospital, where he was seen by the staff and examined under ether. At this time there was a prominent projection upon the front and outer aspect of the ankle, and there was a fracture of the tibia of perhaps an inch and a half above its lower extremity, a fracture of the tibia and fibula; the whole thing was like a bag of bones, as if it had been run over and crushed rather than injured by falling upon his feet. On falling, he struck rather upon the outside of his foot, receiving the greater force of the blow upon the outside of his foot. Most of the force of the fall was received upon the injured foot, the other foot receiving a mere contusion.

While under the influence of ether every effort to correct deformity at the ankle was made. Upon careful examination, it seemed to us that there was a displacement of some portion of the astragalus, and

from the fact that there was no loss in the contour of the joint and that there was no sinking down of the malleoli to the bottom of the foot, and from the fact that the projecting fragment seemed to be somewhat movable, although it could not be made to grate against any other fragment, yet it did not seem to have the whole of the astragalus in its formation, our conclusion was that the astragalus had been fractured and a portion of it had been forced out and become impacted between the separated bones of the leg. By extension and pressure this projecting fragment was made to recede somewhat, but we could not make it return fully to its normal position. Now the question we debated very seriously was whether it was better to leave the parts in as good a position as we could restore them at the time and defer any operative interference until a later time, or whether we should at once cut down upon and remove this projecting bone. I was influenced in the decision, which I had to make myself at the time, by these two facts: First, the whole part was very seriously injured, blood was being poured out and infiltrating these parts, and the possibility of septic infection, however great my care might be, could not be lightly dismissed; if septic infection should take place with the limb in that condition, the probabilities of very extensive damage and of great functional destruction seemed to me to be very great. It seemed to me, therefore, wiser not to make an incision and an open wound at that time. Secondly, inasmuch as the amount of deformity was not very great, I felt that it was still possible that a fair degree of function might be restored to this joint despite the deformity, and that it would be wise to wait and see what would be the result. Influenced by these two reasons I simply put the parts in as good condition as I could, and put it up in plaster; five weeks have elapsed now and its condition is as you see it. The width of injured ankle over the malleoli is half an inch greater than the other side. The length of the injured leg, as measured from the head of the fibula to the tip of the malleolus below, is half an inch less than the other side; whether it was so before the accident or not I do not know. A hard mass still projects just in front and above the external malleolus; flexion of the ankle is restricted, extension is fairly good.

Dr. FOWLER.—I think, Mr. President, that the question of the removal of the fractured portions of the astragalus in a case of this kind will depend a great deal upon the amount of distortion of the foot and the amount of pressure upon the superadjacent soft parts. It has been my fortune to meet with several cases almost analogous to those presented. One was a line man employed by the Western Union Telegraph Company, who was precipitated to the ground by the giving way of a cross-arm upon a telegraph pole, striking upon both feet. He

was in an upright position when the cross-arm gave way, and his arms were clasped about the pole; he had the presence of mind to keep them so as he rapidly slid down the pole, although his arms were torn by splinters. He struck squarely upon both feet; as a result he had the same condition in both feet as has been presented here. In that case I considered also the question of opening up the joint and removing the fractured portion of the astragalus, which had been driven up between the malleoli, but decided not to interfere. I have reason to congratulate myself, as I think you will, that such was not done. The man made a good recovery, and has good movement of his ankle-joints. The last I knew of him he was in the fire telegraph service of this city, and, as you know, men are not admitted to that service except after careful examination by the fire-department surgeon. His condition, therefore, must have been satisfactory.

I have never cut down and removed the fractured portion of the astragalus in these cases, although I know it has been recommended by English writers. The special reason perhaps why I have not done this is that the extreme tension, said to be present after fracture and dislocation of the astragalus, has not been present in any of my cases. I think with so little pressure as was exerted by the fragments in this case and the cases which I have seen, it would not be a justifiable procedure with the amount of traumatism already existing, to open the joint and remove the fractured portion of the bone.

DR. WIGHT.—The Doctor's remarks remind me of two cases that were not in my memory when I spoke before. Two years ago I saw a patient at Williamsburgh with the attending physician, a strong vigorous man about thirty-five years old, who had fallen from the electric-light poles and struck upon both feet. The lower end of the leg bones and the astragalus I am sure were broken. He made a very good recovery, and while we discussed the question of amputating one of the feet at the outset, we thought we would wait.

This winter there was another case at the hospital very similar. The deformity was very great. I thought it best to wait and see how it turned out before operating, and that came out very well. I am inclined to think with Dr. Fowler that we had better be careful how we interfere in operating, and I think the chairman in his case acted wisely.

DR. FOWLER.—In none of the cases, I may add, as confirmatory of your own examination and opinion in this case, was there any crepitus detected. The diagnosis was made entirely upon the separation of the malleoli and the deformity in front of the joint.

DR. BOGART.—It is interesting not to forget Dr. Wight's case in which, although probably no incision was made, the bone came out.

It certainly could not have been treated according to the most careful aseptic methods, and yet the result is free motion at the ankle-joint and about, that looks almost entirely natural. It is evident that a good result may be had from either method.

Dr. FOWLER.—I intended to ask Dr. Wight if it was not his opinion that the pressure upon the overlying structures had led to gradual sloughing, and whether this was not a case which in the beginning would have been a proper one to cut down upon and remove the fragment?

Dr. WIGHT.—I suppose you are right; the main part of the astragalus had been cut off from the blood-supply, and had perished and worked its way out. In such a case incision would be proper.

Dr. PILCHER.—The two cases are quite dissimilar; the character of the dislocation was entirely different. In one case the great mass of the astragalus was thrown downward and backward, in the other a portion of the astragalus has been thrown upward and forward. In one simply a fracture of the astragalus, in the other case a fracture of the adjacent bones as well, so that the cases are hardly comparable.

I remember a similar case of compound fracture involving the ankle-joint, which was occasioned by the individual being thrown from his carriage on the hard asphalt pavement on Bedford Avenue in a runaway accident, and my recollection now is that there was a loss of a portion of the astragalus, in which, notwithstanding the very careful treatment in accordance with the best light surgeons had at that time, the result was a prolonged illness, extensive suppuration and very nearly a loss of his life, which finally was saved by amputation, a result which I think was not infrequent in such cases in former years of compound dislocation of the ankle-joint. In the case now presented by Prof. Wight there must have been exceptional conditions to have enabled this man to have escaped septic infection with its attendant evils.

Dr. FOWLER.—As I understand, in this case there was no breach of integument in the beginning; my idea was that the superadjacent structures—this blackened portion—looks as if it had been exposed to the air for quite a long time, as if it had been partially extruded and there remained. If you place that fragment in its former position, you will see that it is the part which would naturally have projected from the surface before the final removal of the entire fragment. In that case probably the inflammatory conditions of the surrounding structures had in great measure subsided, and in that way this case is hardly comparable with the operation for removal in the early stages, when they are in a condition when infection could most readily occur.

Dr. WIGHT.—Another point in favor of that view would be the fact

that that was removed on the 5th of February, and on the 25th it was pretty much all healed up, in the condition it is now. The original injury was the 1st of December.

Dr. BOGART presented a case of "Compound, Comminuted, Depressed Fracture of the Skull, with Considerable Loss of Cerebral Tissue. Recovery."

J. S., aged seventeen, the patient whom I present, was brought to the M. E. Hospital by our ambulance, on the evening of January 13th, with a history of having been struck by a hammer in the left posterior frontal region. The ambulance surgeon, who saw him about fifteen minutes after the accident, found him suffering from a compound, comminuted, depressed fracture of the skull. He was in a condition of mental stupor, answering some questions, correctly, in monosyllables; others, incoherently. His pupils responded slowly to light. He uttered no complaint of pain, and his pulse and respiration were normal. The wound was protected by an aseptic compress, and the patient immediately transferred to the hospital. On his arrival there, I was promptly notified, and directed that his head should be shaved and disinfected, and other preparations made for doing whatever might seem indicated for his relief.

When I reached him, about an hour after the accident, his general condition remained unchanged. Examination disclosed a semicircular wound of the scalp extending forward, from a point in the vicinity of the intersection of the left temporal ridge and the coronal suture, about one and one-half inches. Immediately beneath this wound the skull was fractured and unequally depressed over an area about one and one-half by three-fourths inches; that part lying nearest the vertex and immediately beneath the scalp-wound being most depressed, about three-eighths of an inch, as though the opposing surfaces of the face of the hammer and the skull had not been brought into contact in parallel planes. Blood and brain matter oozed from the wound.

Under ether anæsthesia, I enlarged the scalp-wound and removed the depressed bone, which was much comminuted, revealing an extensive wound of the dura and brain, which had been penetrated and from which there was free hæmorrhage, as well as a considerable loss of cerebral tissue.

Hæmostasis having been effected by the application of a number of catgut ligatures to cerebral as well as meningeal vessels, the wound was then thoroughly irrigated with the pure salicylic solution and the scalp-wound, except that immediately overlying the cranial deficiency, closed with sutures. The remaining portion was loosely packed with iodoform gauze and an aseptic dressing applied.

January 14th, 8 A. M.—T. 99.6°; P. 62; R. 18. Patient's general condition improved. Complains of no discomfort. Mind is not clear. Sleeps most of the time. 4 P. M., T. 101°; P. 80; R. 25.

January 15th, 8 A. M.—T. 103.2°; P. 88; R. 25. 12 M., T. 104°; P. 100; R. 25. Wound dressed. Packing removed and drainage-tube inserted. Wound aseptic.

From this date patient's temperature gradually declined, the somnolency diminished and his mental condition improved, until the 22d, when his temperature became normal and his mental condition sound.

February 1st, he was permitted to be up, and on February 13th, one month after admission, he was discharged with only a slight granulating surface at the site of the unsutured portion of his wound, which was completely healed a few days later.

The wound pursued an absolutely aseptic course, and recovery was rapid and uninterrupted save for the transient rise in temperature, which was probably due to the iodoform used in the primary dressing.

On inspection, the scalp is seen to be depressed over the seat of injury and the pulsation of the cerebral vessels is well marked. Palpation readily detects the cranial deficiency without giving rise to pain.

Upon inquiry, I have learned that his friends have observed no change in his mental condition.

My object in presenting the history of this case is to call attention to the almost entire absence of cerebral symptoms, together with the prompt healing of a wound involving a considerable loss of brain matter. This result is undoubtedly due to the fact that the seat of the brain injury was anterior to the motor area.

Dr. WIGHT.—I was just reviewing some impressions I have had with reference to fractures of the skull, and the impression I have is that injuries at the anterior portion of the head are less fatal and less troublesome to treat than those in the middle regions, or posterior. That is no new observation, but I would like to call attention to that point. I think Dr. Fowler and myself had a running commentary on that subject last year or the year before, until the President was obliged to stop us, we taking up so much time.

Dr. WIGHT presented the following case: A man, between thirty-five and forty years of age, fell into the hold of a vessel and received fatal injuries to the head, and also a compound dislocation of the right semi-lunar bone, which was still attached by the anterior ligament. There was a hole in the wound into which I could put my finger, and I found this bone projecting up, and I presume that that bone made this wound. It turned right over upon itself, still holding on, as you see, by the anterior ligament—that is, the attachment to the radius. There was apparently no other injury but that. My impression is that

it must have been caused by a fall upon the hand. I believe there are one or two cases on record somewhat similar, but I cannot now point out where they are to be found.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular monthly meeting of the Medical Society of the County of Kings was held at the Society rooms, 356 Bridge Street, Tuesday evening, April 15, 1890, at 8 o'clock. Dr. Chase in the chair.

There were about 75 members present.

The minutes of the previous meeting were read and approved.

The Council reported favorably upon the following applicants, and recommended that they be elected to membership :

Drs. Wm. Moser, Florence A. Bellknap, Peter Scott, Jas. M. Sayles, Chas. J. Peterman, Geo. D. Barney, Wm. F. Dudley, Chas. H. Jones, Thos. U. Joyce, R. P. Thompson, Thos. Dixon, and John Von Glahn.

The Council also reported that the matter of the legality of admitting graduates of irregular schools to membership in the Society, which was referred back to them at the last meeting of the Society, was still under advisement, and that final report would be made at the next meeting.

The above report of Council was received and approved.

The following applications for membership were announced :

Henry Wallace, 183 Congress Street, L. I. C. H., 1890; proposed by Dr. Wm. Wallace; Dr. J. M. Van Cott, Jr.

C. F. Kuhn, 168 Jay Street, L. I. C. H., 1883; proposed by Dr. D. G. Bodkin; Dr. W. B. Chase,

Edward J. Mealia, 233 Van Buren Street, of Col. Physicians and Surgeons, N. Y., 1883; proposed by Dr. W. B. Chase; Dr. D. G. Bodkin.

H. A. Alderton, 381 Franklin Avenue, Univ. City of N. Y., 1885; proposed by Dr. J. E. Sheppard; Dr. J. M. Van Cott, Jr.

Franklin Pierce Miller, 282 Stuyvesant Avenue, Med. Dept., N. Y. Univ., 1876; proposed by Dr. Belcher Hyde; Dr. J. M. Peacock.

The chair appointed the following standing committees :

General Medicine—Glentworth R. Butler, Wm. H. B. Pratt, Wm. Browning, C. E. Emery.

Surgery—H. W. Rand, P. L. Schenck, Alex. J. C. Skene, Wm. H. Bates.

Obstetrics—A. Ross Matheson, J. C. MacEvitt, Lucy M. Hall.

The scientific business of the evening was opened with a paper by Dr. Jas. L. Kortright, entitled "Accidental Hæmorrhage."

The second paper of the evening, on the "Treatment of Dysentery," was read by Dr. H. A. Fairbairn, and discussed by Drs. McCorkle, Wallace, Grover, Hutchinson, Briggs, Evans and Owen.

The chair stated that Dr. Jas. J. Keyes had been added to the Registration Committee, and requested all members to report to this committee the names and addresses of any new comers in their respective vicinities.

There being no further business, on motion, adjourned.

W. M. HUTCHINSON,
Secretary.

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.,
Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

IS ARTHRECTOMY OR RESECTION TO BE PREFERRED IN TUBERCULAR GONITIS?

Plum (Hospitals Tidende, 1889, 3 Række, Bd. VII., No. 2. Centralblatt f. Chirurgie, 1890, No. 8, p. 145). P. declares that resection is the operation to be preferred. Arthrectomy furnished in his experience but unsatisfactory functional results. The object of the operation, namely, the removal of all of the diseased portion of the joint surfaces cannot be carried out without dividing the lateral ligaments of the knee-joint in order to reach the posterior wall of the joint capsule. Following these steps of the operation, the most desirable result, namely, a solid ankylosis in good position, is rarely obtained. P. has frequently observed that, even after several years following the operation, complete bony ankylosis had not occurred; on the contrary, flexion with valgus position of the knee developed, which persistently recurred in spite of frequent forcible straightening of the limb. Besides which P. has seen a not inconsiderable comparative lengthening of the diseased extremity following arthrectomy. The functional disability, in his experience, has been very decided, and has led him to entirely abandon this operation in favor of resection, believing that the unfavorable functional results, reported as occurring as sequelæ to the latter operation, to be very much exaggerated.

(In all probability it will be ultimately found that both arthrectomy and resection will ultimately find a place among the resources of the surgeon in dealing with tuberculosis, the choice of the operative pro-

cedure to be adopted depending upon the ravages which the disease has made and the period of time elapsing between the beginning of the disease and the opportunity for interference. F.)

TREATMENT OF OBLIQUE FRACTURE OF THE LEG BY THE MODIFIED
EXTENSION - METHOD.

Bilser (*Deutsche med. Wochenschrift*, 1889, No. 33). The many methods suggested for the management of spiral and oblique fractures of the tibia is evidence of the great difficulties which attend the treatment of this class of cases. The tendency to displacement by muscular contraction, the fragments gliding one upon the other, together with the weight of the foot, are the principal factors in the production of the characteristic deformity. It is desirable to eliminate, in the first place, the action of the muscles. Stromeyer suggested division of the tendo, Achillis as a means of accomplishing this object. A much simpler method, according to B, consists in the employment of a modified extension and counter-extension by means of adhesive plaster, as now commonly employed in the treatment of fractures of the thigh. The reason for its non-employment heretofore probably depends upon the prevailing impression that the purposes of extension were not accomplished unless the traction was brought to bear entirely below the seat of fracture; a somewhat difficult task to accomplish in the great majority of cases, from the slight space available for the purpose of the application of the plaster. Bardenheuer has shown that the strips of adhesive plaster may be carried above the point of fracture, even extending to the knee, with advantage.

For the simplest cases of oblique fracture of the leg, B. recommends the application of extension by means of adhesive plaster applied in the long axis of the limb. For the more difficult cases, on the contrary, in addition to the longitudinal extension, there is added transverse- and rotation-extension. The extension plaster may be applied over the ends of the fracture itself, or in the neighborhood thereof.

The advantages of this method consist in the facility with which the point of fracture may be kept under direct observation and its applicability therefore to compound fractures, and the certainty with which the replacement of the ends of the bones may be effected and maintained. Passive motion of the ankle-joint is possible at an early period of the treatment, and the occurrence of pseudo-arthritis avoided with greater certainty.

Mention is made of Bardenheuer's extension experience in the treatment of fractures of the extremities by the extension-method, and the fact that, in 440 cases of fracture of the leg, in not a single case did there occur failure of union.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

MANAGEMENT OF SHOULDER PRESENTATIONS.

E. P. Wells (Am. Jour. Obstet., Mar., '90) reports several cases of cross-presentation for the purpose of directing attention to the great advantage of the knee chest position in facilitating the performance of version. The practice is an old but neglected one. What is often a difficult may thus become an extremely easy operation. The contractions of the uterus are much less powerful in the inverted position. The fœtus gravitates away from the brim, the hand is readily introduced and all the manipulations are extremely simplified. Cephalic version is generally feasible in cases in which the podalic only would be possible in the dorsal posture.

For cephalic version the manipulation consists in pressing the presenting shoulder away from the brim in a direction toward the child's breech with the internal hand, the other hand assisting by external pressure over the head. The shoulder easily passes out of reach the head taking its place at the brim.

For podalic version the direction of the pressures is reversed, the external hand being applied over the breech. In these procedures the hand is introduced but a very short distance into the uterus. If they fail, which is rarely the case, resort may then be had to the passage of the hand deeply into the uterus for the purpose of bringing down a foot.

INCOERCIBLE VOMITING OF PREGNANCY.

Gueniot (Arch. d'obstet. et de gyn., Jan., '90) recognizes three sources of this malady, viz. : 1. The pelvic organs. 2. The nervous system. 3. The gastro-intestinal apparatus. All should be taken into account in directing the treatment.

The therapeutic measures recommended in the various morbid conditions are as follows :

Pelvic Disorders.

1. Utero-deviation. Elevation of the pelvis; Gariel pessary.
2. Erosion. Topical applications ; even cauterization.
3. Vaginismus. Narcotics by vaginal douche or suppository, etc.
4. Periuterine lesions. Horizontal decubitus ; topical use of belladonna or cocaine, etc.
5. Ovarian lesions. Rarely susceptible of diagnosis.

6. Stenosis of os internum. Undue adhesion of the ovum to the lower uterine segment. Dilatation of the cervix after cocainizing, etc. *Neuroses.*

The bromides or chloral by enema; Chapman's ice bag; ether spray for five minutes to the epigastric and dorsal regions before meals, electricity, inhalation of oxygen, etc.

Lesions of the Digestive Organs.

Diet, diluted milk and light bouillon alternately, a coffee-spoonful every half hour, vichy, ice pellets, laxatives, nutrient enemata, flying blisters over the epigastrium, etc. (A writer in the *Canada Lancet* finds an unfailing remedy, regardless of the pathology, in a blister over the fourth or fifth dorsal vertebra. J.)

TRANSMISSION OF MICRO-ORGANISMS FROM MOTHER TO FÆTUS.

Simon (*Arch. d'obstet. et de gyn.*, Jan., '90). Researches made upon rabbits show that the placenta is not a physiological filter, as has been supposed, for the bacilli of anthrax. The penetration of the bacilli corresponded with the duration of the malady. In cases of long duration they were found abundantly in all the foetal structures.

CARDIAC INSUFFICIENCY IN ITS RELATION TO ABORTION.

Dr. M. Hanfield Jones (*Br. Med. Jour.*, Mar. 15, '90). Much attention has been recently paid to the relation of heart disease to pregnancy and labor, little has been given to cardiac disease as a cause of abortion. This paper deals chiefly with cardiac insufficiency independent of valvular affections. The writer assumes with most authorities, that the left ventricle is found normally hypertrophied at the close of pregnancy owing to the increased work entailed on the heart by the growth of the uterus and its contents. This physiological hypertrophy he thinks sometimes fails or is imperfectly developed. The systemic circulation is then impaired, the walls of the capillary vessels suffer degeneration and hemorrhage frequently takes place between the uterine wall and the foetal membranes. The ovum thus becomes a foreign body and is cast off. The treatment advised is rest in the recumbent posture, the use of stimulants, cardiac tonics, liberal diet and general hygienic measures.

INFANTILE OPHTHALMIA.

Grossman (*Br. Med. Jour.*). It is estimated that about thirty per cent. of all cases of blindness result from ophthalmia neonatorum, and that there are in the United Kingdom no less than seven thousand blind from this cause. The gonococcus is to be found in the pus in the majority of cases, not in all. The disease may arise therefore not only

from gonorrhœal but in a certain proportion of cases from other vaginal secretions.

Ophthalmia of the new born is always preventable, by timely interference always curable. For prophylaxis experience has shown that a thorough cleansing of the eyes with tepid water and subsequent drying, immediately on birth of the head, is almost universally successful. The additional use of sublimate or silver is still more efficacious (a 1-1000 solution of the former or 2-100 of the latter).

For the remedial treatment great stress is laid upon the importance of frequent and thorough removal of the pus. The preferred antiseptic is the nitrate of silver. A 2 per cent. aqueous solution should be applied over the whole conjunctival surface once or twice daily after cleansing and continued till the secretion ceases to be purulent. The author believes, however, that a weaker solution, even 1-2 per cent., is effective for either prophylactic or remedial use.

[These observations go to enforce the necessity of at least carefully cleansing and drying the eyes as soon as the head is born in all cases in private as well as hospital practice.—J.]



PRACTICE OF MEDICINE.

BY HENRY CONKLING, M.D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

ANGINA PECTORIS.

Balfour (Edinburgh Med. Jour., April, 1890) regards pain in the region of the heart as of little consequence, as far as being indicative of heart trouble, until after middle life. Acute inflammatory affections are, of course, excepted. There are certain affections which sometimes produce pain—occasionally severe—in the cardiac region. Among these are mentioned neuralgic pains associated with constipation, gastro-duodenal dyspepsia, intercostal neuralgia and myalgia; and cardiac muscular pains, probably either rheumatic or gouty.

The author regards angina as a neuralgic condition. The working force of the nerve affected is diminished. The nerves involved are probably branches from the aortic or cardiac plexuses, or some of the larger nerves from the pneumogastric or sympathetic.

The pain is a dull ache in mild cases. When the attack is severe "it feels as if a mailed hand grasped the chest in the cardiac area, and squirted through its fingers flashes of excruciating agony." The pain

radiates in various directions. It may go to both shoulder joints, down the arm, to the fingers, up into the neck, and sometimes into the groin and lower extremities. The patient feels choked; respiration, however, is unimpeded. Mere nervous excitement prevents the due expansion of the lungs. The countenance may be Hippocratic or may be merely haggard or anxious. It is interesting to note here that the author does not consider the pain in the left upper extremity as diagnostic of angina pectoris, as is so often stated. Angina is very frequently simulated by malingerers, and too much stress laid upon the description of such pain may be misleading.

The causes, of whatever nature, are believed to affect directly or indirectly the nervous force of the heart. A tumor, aneurism, or dilated aorta may produce pressure on the cardiac or aortic plexuses and so become a cause. Sclerosis of the coronary arteries is often present, but does not necessarily belong to angina pectoris, in the author's opinion, inasmuch as changed conditions in the coronary arteries are often found where, during life, angina had never existed. Fatty degeneration is regarded as a similar concomitant. *Any changed relation between the coronary arteries which nourish and the cardiac muscle which is to be nourished is liable to cause angina.* The author has never seen a case of true angina in which signs of dilated heart were not present. The force of dilated and hypertrophied muscle are discussed at some length.

[NOTE.—In this article the pronuciation angĭna is used instead of old angina. This corresponds with the best authority on medical terms, Campbell's Language of Medicine, where the long pronuciation is considered as incorrect.]

DIPHThERIA.

(Lond. Med. Rec., Feb., 1890) The use of iodoform as a local application, applied in powder, through the nares or the mouth, is advocated. It is believed to be beneficial to the diseased tissue, inasmuch as it prevents putrefactive changes and thus arrests development of bacteria. It has the effect of an anodyne, and no case was affected by salivation, diarrhœa, or general poisoning. Nausea was never produced by the use of the drug. Probably very little is absorbed, as it remains on the diseased surface for some time. As it is a fine powder, iodoform is easily applied.

Peroxide of hydrogen (hydroxyl) has been used in a series of cases of diphtheria. The indication for its use, as would seem from the paper, is simply as a *solvent of the membrane*, which comes away in small fragments. No statement is made of better results from this

method of treatment. A sixty per-cent. solution is first used. The drug seems to act both as an antiseptic and deodorizer. Its use causes no pain. It is not poisonous, and is without odor or taste.

THE TREATMENT OF ASTHMA.

(Lond. Med. Rec.) The local use of a five per-cent. solution of cocaine, painted on the membrane of the nostrils, or sprayed into nose and throat, is advocated as abortive treatment. The patient may inhale a few drops of pyroline. *Cocaine hypodermically may be used.* During the intervals iodide of potassium is recommended. The dose suggested is quite small, being only thirty grains the day. Belladonna and arsenic may alternate with the iodide. When emphysema is largely present the mechanical treatment of compressed air is recommended.

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

ADULTERATION IN NEW JERSEY.

According to the Report of the State Dairy Commissioner of New Jersey, for 1889, an analysis of 2,507 samples of various food-products showed 43.96 per cent. to have been adulterated or were not standard.

The articles found to show the largest percentage of falsification were lard, 163 out of 437 samples; imported canned goods, 88 out of 107 samples; ground coffee, 40 out of 50 samples; spices, 306 out of 649 samples; extracted honey, 83 out of 111 samples; maple syrup, 12 out of 24 samples; molasses, 38 out of 64 samples; vinegar, 21 out of 37 samples; baking-powders, 11 out of 13 samples; jellies and jams, 159 out of 192 samples.

As an example of the ingenuity used in the preparation of food, the Report describes the preparation of bologna sausage as follows: "After the meat was chopped and the sausage-meat thus prepared put into the casings, the sausage was boiled in a bath containing a portion of the following coloring agent: Bismarck brown, 14 parts; garnet red, 2 parts; water, 1½ pints. This gave the sausage a brown color. When this process was complete, the sausages were coated with a varnish composed of shellac, resin-oil, and alcohol."

The Report enumerates the following as the articles used to prepare jellies and jams: To give substance: Apple-pomace, apple-juice, starch,

glue, gelatin, and isinglass. To flavor: Apple, inferior or spoiled fruit juices, artificial compound ethers, and acetic acid. For coloring, the following aniline dyes: Eosine, fuchsine, Bismarck brown, garnet red, ruby red, and various carmines. These jellies are freely sold in Brooklyn and New York.

The examination of drugs showed that of 1,072 samples examined, 692 (or 64.5 per cent.) were adulterated or inferior to standard.

It should be said that 813 of these analyses were confined to cream of tartar and olive-oil. Of the other articles examined, those showing the greatest adulteration were: Paregoric, 18 out of 22 samples; seidlitz-powders, 15 out of 37 samples; compound spirit of ether, 24 out of 25 samples; spirit of nitrous ether, 23 out of 24 samples; tincture of opium, 20 out of 23 samples; tincture of chloride of iron, 6 out of 10 samples; and tincture of iodine, 15 out of 16 samples.

ZINC IN DRIED FRUITS.

The presence of zinc in bleached dried apples has frequently been proved. The sanitary authorities in Kiel, Germany, found it necessary to destroy a large quantity of American dried apples because of the quantity of zinc they contained, and to issue a decree forbidding the importation of dried apples unless accompanied with a chemist's certificate that each invoice was free from injurious substance. (Pharmaceut. Centralhalle, No. 21, 1889.)

J. Stinde (Wagner's Jahresbericht, 1886, p. 116) often found zinc in dried apples. Prof. S. A. Lattimore (Sixth Report N. Y. State Board of Health, p. 373) found so little zinc, that, in his opinion, it should not excite any apprehension of harm. Prof. Cornwall (in the Report of the State Dairy Commissioner of New Jersey, 1889) found as a maximum quantity, in six samples examined by him, an equivalent of two grains of crystallized zinc sulphate to the ounce of apples.

In a recent Bulletin the Iowa State Board of Health has called public attention to this danger in white dried apples.

The *Annals of Hygiene* says: "If consumers of dried fruits will insist upon obtaining honest, healthful, unbleached fruit, or none at all, such self-preservative action, added to that of the German government, will soon correct such a fraud as the useless and injurious bleaching of fruits."

GROUND-WATER FROM CEMETERIES.

Dr. E. von Esmarch (Zeitschrift f. Hygiene, Band 7, Heft 1) has examined the question of the dangers of contagion through the drainage from cemeteries. His experiments show that where dead bodies are placed in water or buried, that the water or earth surrounding the

body does not become contaminated with germs. He finds that in the case of anthrax, the bacilli die out very quickly from the dead body. He does not think the disappearance of pathogenic organisms from a dead body is due to the destructive processes of putrefaction, as these same organisms disappear from tissues preserved by antiseptic preservative fluids. He concludes, with several other German observers, that the proximity of cemeteries and the drainage-water from them have no influence in the spread of epidemic or contagious diseases.

He does not tell us whether the typhoid bacillus meets with the same fate as that of anthrax.

STERILIZED MILK.

The Sanitary Commission (Gesundheitsausschusses) of the city of Leipzig has recommended the following scheme for the feeding of infants with sterilized milk, according to the *Pharm. Centralblatt*, 1889, p. 558:

COW'S MILK.		WATER.		EXTRACT OF MALT.		Capacity.
		c.c.	c.c.			
In the 1st month.....		350	250	3½	teaspoonfuls in 8 bottles of	75 c.c.
.. 2d		450	400	4½	.. .. .	128 ..
.. 3d		550	400	5½	.. .. .	136 ..
.. 4th		650	350	5	.. .. .	143 ..
.. 5th		750	250	4	.. .. .	166 ..
.. 6th & 7th month..		850	150	4	.. .. .	166 ..
From the 8th month on	1000 c.c. pure milk			6	.. .. .	166 ..

As an addition it is recommended to add a teaspoonful of Lehman's conserve.

Prof. Hübner has shown such good results in his clinic from the feeding of infants upon sterilized milk, that the city magistrate has sent a circular to the druggists asking them to prepare and keep for sale at a moderate price sterilized milk.

Hübner is of the opinion that the milk should be prepared with the greatest care, and will be more satisfactory if prepared by an apothecary.

The sterilization of milk (according to the *Molk-Zeitung*, 1889, p. 137) presents certain difficulties. The heating to 110° to 120° C. (230° to 248° F.), which temperature is necessary to sterilize liquids, causes a browning of the milk. At a temperature of 100° C. (212° F.) the sterilization is not complete, the spores of bacillus subtilis resisting this temperature for six hours. The heating to 75° C., as is done in many of the ordinary methods, does not sterilize, for the above-named spores can withstand this temperature for several days. Even at this temperature milk-sugar caramelizes in forty-eight hours and browns the

milk. The methods of Soxhlet and Engli-Sinclair do not overcome this difficulty, but they hinder the growth for a time, of the micro-organisms, already in the milk, and prevent the ingress of others.

Freudenreich has examined milk treated with the Sinclair apparatus and then put into the incubator for twenty-four hours, and has found about four millions of bacteria in a cubic centimetre. He also found that these bacteria were almost exclusively *bacillus subtilis*, and that the *bacterium lactis*, which act so disastrously with infants, was almost entirely removed by the sterilization.

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital; Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

TUMOR METASTASES THROUGH CAPILLARY EMBOLISM.

Zahn (Virchow's Archiv. Bd. 117, 1889) regards only such cases of secondary growth as due to capillary embolism in which the seat of the primary tumor is on the side of the venous system, with a closed foramen ovale, and in which secondary peripheral nodules are formed from pulmonary metastasis from which it is supposed to be that they have not arisen from "retrograde transportation," but that the tumor cells first passed through the lungs and then plugged the general capillary systems, thus building foci of secondary growths.

Z. cites three cases in illustration: 1. Mammary carcinoma, secondary nodules in the lungs, liver and bone marrow. Here the pulmonary nodules arose by direct, the liver nodules by indirect or "retrograde" embolism. The bone-marrow tumors all arose through direct capillary embolism from the primary tumor, and not from the secondary pulmonary nodule, because of the small size of the latter, and the great size and numbers of the former.

2. Primary alveolar endothelioma of the back of the head, secondary deposits in the soft parts near the carotid, and in the liver. These deposits were the result of the loosening of tumor cells in the vena jugularis, the neoplasm having projected into this vessel, loosening and passing through the pulmonary capillaries, and finally lodging to grow in the locations above described.

3. Primary carcinoma of submaxillary gland, involving also the surrounding soft parts and lower jaw. In addition to this, secondary foci in the right frontal bone, sternum, ribs, and vertebral bodies. These secondary foci could not have formed by "retrograde transportation,"

since the foramen ovale was closed, and no secondary nodules were found in the lungs. The cells loosened from the primary tumor must have passed through the pulmonary capillaries, finally to form metastatic deposits in the bone-marrow. All three cases revealed the secondary nodules on microscopic examination to resemble the primary tumors in structure.

ANGIOSARCOMA PERICARDII.

Redtenbacher (*Wiener klinische Wochenschrift*, 1889, No. 11) remarks that primary disease of the pericardium offers for clinical diagnosis such great difficulties that the publication of cases exactly observed must always be welcome.

A man, aged twenty-two, suddenly sickened, with pain in his left breast stretching up to his shoulder. Examination revealed the characteristic symptoms and signs of pericarditis. Four weeks later hard cough and expectoration set in, then, gradually following, effusion into the pleural and peritoneal cavities. Aspirated fluid very cloudy; urine contains neither albumen nor casts. Death followed the gradually increasing dyspnoea and anasarca in about four months after admission to hospital.

Clinical diagnosis: "Tuberculosis serosarum."

Autopsy revealed: (a) Primary neoplasm in the pericardium, involving the cardiac base and right auricle, which latter it had perforated, entering the right heart. (b) Multiple metastatic pulmonary neoplasms.

Microscopic examination of the tumor revealed it to be composed of many blood-vessels surrounded by spindle-cells—angiosarcoma.

R. believes the growth to have originated in the blood-vessels of the pericardium. He does not consider it a luxuriant growth of blood-vessels in a tissue previously thickened by chronic inflammation; and this theory is amply supported by the clinical history of the case.

CAN AN EXTERNAL TRAUMATISM PRODUCE ACUTE LOBAR PNEUMONIA?

Sokolowski (*Berliner klinische Wochenschrift*, 1889, No. 39) reports a case of severe traumatism of head and breast of a boy, aged fourteen, who afterward developed meningitis and pneumonia in the right apex. The breast injury was just over the site of the pneumonia, and S. queries whether the pneumonia was not brought on by the predisposing influence of the trauma on the pulmonary parenchyma, rendering it susceptible to the invasion of the specific germ of pneumonia.

(In other words, S. believes that devitalization of tissues renders them more susceptible to the influence of micro-organisms.—V. C.)

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital; Curator and Microscopist, New York Eye and Ear Infirmary.

ARGYLL-ROBERTSON PUPIL.

At the February meeting of the Berlin Medical Society, Mendel read an interesting paper on this condition, of which the following is a condensed abstract taken from the *Centralblatt f. pr. Augenheilkunde*, February, 1890:

In 1869 Robertson first called attention to a special symptom in patients suffering from nervous disease. In eyes of normal vision and appearance the pupils failed to show the least direct reaction to light, contracting, however, readily on accommodation for near objects or on convergence. His observations were confirmed by other observers, and Erb showed that this symptom appears especially in two diseases, namely, tabes and the progressive paralysis of the insane, and in them so constantly as to be of considerable value in diagnosis, more especially as it is an early symptom, indeed sometimes the earliest. We should therefore be on the watch for it in suspected cases. In consideration of the importance of this symptom it is natural to ask where it is localized, with what changes in the nervous apparatus associated, or by what produced. An affection of the optic nerve will not produce it, as the Argyll-Robertson pupil may be found for years without change in visual acuity, neither can it be due to changes in the peripheral oculo-motorius, as it is hard to see how these nerve-fibres could act to accommodation and not to light-stimulus. It only remains, therefore, to accept the view that the defect is somewhere in the so-called "central reflex bow." The first experiments in this direction were by Flourens, who located the seat of the symptom in the corpora quadrigemina, where, according to his view, the nervous stimulus is transferred from the optic to the oculo-motorius. His opinion has been maintained up to the present time by ophthalmologists, and Magnus sketches the following course of the stimulus: Optic tract, corpora quadrigemina, nucleus of the sphincter iridis, and lastly oculo-motorius trunk to eye. That this view is false, Mendel believes to be shown by the experiments of Gudden, who removed the corpora quadrigemina without observing any interference with the pupillary movements. The seat of the nervous transmission can therefore not lie in them, and Gudden locates it in the external corpus geniculatum, without, however, offering any proof in support of his belief. Mendel, in

his experiments, removed the iris as completely as possible in new-born animals (dogs, cats, and rabbits). Phthisis bulbi or suppuration destroyed the majority of such eyes; some, however, were preserved which showed during life no impairment of the visual act. All his results showed the following conditions:

In those cases in which, in consequence of destruction of the eye, the optic nerve atrophied, there was found in the brain a demonstrable atrophy of the external corpus geniculatum of the opposite side—results already published by Gudden and his pupils. In addition, however, he also found, even when the eyeball was preserved, an atrophy of the ganglion habenulæ of the same side. When in all cases during life the single abnormal symptom is absence of iris-function, and after death an atrophy of the ganglion habenulæ of the same side is found, one is certainly justified in believing that it is the centre for the iris-movements. That it is a reflex centre is evidenced by other appearances: as the fact that the pupillary fibres of the opticus in part enter the ganglion habenulæ.

Besides, Gudden, although regarding the external geniculate body as the iris-centre, reports that removal of the anterior corpora quadrigemina causes no disturbance of the pupillary movements, such disturbance, however, following the removal of a “prominence” in front of them. This prominence is obviously the ganglion habenulæ. In support of his views Mendel mentions that Bechterew and others have in various ways come to the belief that the centre for pupillary movements lies in the wall of the third ventricle and especially at its posterior part. This belief corresponds fully to the experimental results obtained by Mendel.

The question as to the course of the fibres from the ganglion habenulæ to the oculo-motorius is answered by Mendel as follows: He found the ganglia habenulæ of both sides connected by a commissure, corresponding to the lowest part of the posterior commissure. This would be in accord with the physiological postulate that the pupils act symmetrically. The commissure showed a certain degree of atrophy on the side of the atrophic ganglion, which could be traced into the posterior commissure, so that according to this the course of the fibres from the ganglion habenulæ to the oculo-motorius would be through the posterior commissure. It is further remarkable that with changes in the pupils the nucleus of the oculo-motorius was constantly normal. Mendel found, however, in the cell-accumulation of Gudden's nucleus, a difference between the two sides. This cell-group is situated below the oculo-motorius nucleus, and Mendel traces out the “central reflex bow” thus: Retina, optic nerve and tract, ganglion habenulæ of same side, posterior commissure, Gudden's nucleus, oculo-motorius, and sphincter iridis.

In man a decision will be only possible after careful examination in tabes and paralysis of the exact spot located by Mendel as the pupillary centre. Some scattering observations, in part confirmatory, have already been made, though Moeli was unable, in cases of Robertson pupil, to detect any atrophy of the posterior commissure (a reference by Senator in the discussion of Mendel's paper). While the Argyll-Robertson pupil occurs in mydriasis as well as myosis, it is especially observed in connection with the latter.

SUPPURATIVE HYALITIS AFTER OPERATIVE CICATRICES AND CICATRIZED
IRIS PROLAPSE.

Wagenmann (*Graefe's Arch. f. Ophthalm.*, xxxv., 4, p. 116). It has long been recognized that after operations, especially cataract extractions and iridectomies, even years afterward, acute suppurative inflammation of the deeper parts of the eye may appear and rapidly lead to complete suppuration of the vitreous with loss of vision. While occurring at times after operations which had a perfectly normal and natural course of healing, this suppuration is far more likely to ensue when the healing has been irregular, as from iris prolapse or cystoid cicatrix, and may follow a perforating ulceration as well as an operative wound. The impression made by these cases of severe inflammation is that they occur spontaneously or follow some trifling injury, characteristic being the simplicity of their causation which bears no proportion to the severity and rapid course of the resulting suppuration, this suppuration being undoubtedly due either directly or indirectly to the presence of cocci. Wagenmann in his paper reports eighteen cases, the majority of which were examined microscopically, and concludes that the suppuration is due to a fresh infection originating in the cicatrix. *A priori* one can imagine three possibilities:

1st. The cocci might have entered the eye through the original perforating wound or ulcer, and have remained inactive (*Despagnet*). This is not proved and is highly improbable in some cases—as after a normal healing of an operative wound—there having been no preceding infection, and in other cases too long an interval having elapsed in which the eye remained quiet for us to credit the resurrection of an encapsulated nest of cocci. The clinical appearances as well as the results of anatomical studies are against the acceptance of this view.

2d. The cocci might reach the eye through the blood-vessels. Of this form of infection one must distinguish two varieties: the metastatic in which infectious matter is brought to the eye from some centre elsewhere in the body, and the endogenous variety in which cocci circulating in the blood come to rest and develop at a point of less resistance. The inflammation under consideration has no relation to

metastatic panophthalmitis, which is often double and presents a different clinical picture, but is associated with different bodily conditions. In none of the cases examined could Wagenmann discover any relation of the cocci to the blood-vessels, nor were cocci found in the vessels themselves.

3d. The inflammation is due to a fresh infection from the cicatrix. This view, original with Leber, is maintained by the author, who in all cases found more or less marked evidences of suppuration in the cicatrix, and in the majority cocci. The clinical picture of the cases not microscopically examined also suggested the cicatrix as the point of origin of the fresh inflammation.

REMOVAL OF INTRA-OCULAR MELANO-SARCOMA, WITH PRESERVATION OF VISION.

Rolland (*Recueil d'Ophthal.*, January, 1890) reports a case of intra and extra-ocular sarcoma, in which the tumor was successfully removed and vision maintained. As the case is certainly unusual, it is here given at some length.

The patient, a man of thirty-two, in robust health, only complained of the annoyance caused by a growth upon the upper and inner aspect of the sclera, six millimetres from the sclero-corneal junction. This growth was uneven and rough, brownish-black in color, and about the size of a bean. It had taken about ten years to reach its present size, and the patient attributed its origin to a blow on the eye from a twig, received while on an excursion. It was firmly attached to the sclera from which it emerged, and while covering the cornea in consequence of its weight and the action of the upper lid, was not adherent to it. The visual acuity was normal and the ocular movements limited toward the nasal side. Only with the pupil dilated ad maximum could anything wrong be detected with the ophthalmoscope. There could then be seen in the fundus a reddish growth, of the size of a "very large fly's head," corresponding in position to the external portion of the tumor. Microscopical examination showed the tumor to be a melano-sarcoma. Appreciating the natural objections of the patient to the removal of an eye with perfect vision, Rolland proposed the extirpation of the tumor, which was accordingly done under strict antiseptic precautions as follows :

The growth being fixed by a silver wire passed through its neck, a button-hole was made in the sclera about four millimetres long enclosing the base of the tumor, which was then loosened in its attachments. Then by steady traction combined with lateral and twisting movements, the entire tumor was removed, the extra and intra-ocular portions proving continuous. There was a loss of about one-third of the

vitreous. The scleral wound was closed by a single catgut suture, and the conjunctiva brought together over it with fine silk sutures. For five days the eye was bathed every half hour day and night with iced boric solution, and on the sixth day there was no reaction, the cornea and media being clear and the vision perfect. The stitches were allowed to fall out of themselves. Seven months later the patient was enjoying perfect vision and health.

From this case Rolland concludes that an eye affected with melanoma in which the vision is normal should not necessarily be removed in toto, enucleation being reserved for such as are disorganized by the neoplasm. When vision is intact one should attempt the removal of the growth by a long incision into the eye, such an operation having no danger to life if done with strict antiseptic precautions.

INTRA-OCULAR INJECTION OF IODINE IN RETINAL SEPARATION.

This method of treatment proposed by Schoeler has been considered by Dubarry in his inaugural thesis (*Contribution à l'étude du traitement du décollement de la rétine par les injections intraoculaires de teinture d'iode*, Paris, 1889). Experiments on animals showed that the quantity of liquid injected should be small and away from the crystalline lens. In man the injection of the tincture of iodine should be made slowly and without force, and at the part of the separation most removed from the posterior pole of the eye. The immediate symptoms were:

Intra-ocular and peri-orbital pain of several hours' duration.

The sensation of a black or red ball apparently placed before the operated eye.

Ophthalmoscopic examination shows the presence of fluid in the vitreous in the form of a more or less rounded brownish mass.

On the following day mydriasis and conjunctival hyperæmia.

The results observed by him in six cases at the clinic of M. Abadie and reported in full detail were:

Perfect,	-	-	-	-	-	-	1.
Satisfactory,	-	-	-	-	-	-	1.
Passable,	-	-	-	-	-	-	2.
Disastrous,	-	-	-	-	-	-	2

The treatment was purely surgical. The chief disadvantages of intra-ocular injections were a subsequent retinal torpor or the frequent development of capsular cataract. This latter seemed sometimes to diminish after a time but did not disappear, and was sometimes followed by an irido-choroiditis with threatened phthisis bulbi. These complications seem due to excessive quantity of the fluid injected or

to its too irritant quality. Dubarry concludes by advising continued attempts with other or perhaps modified solutions of the iodine tincture.

OUABAIN AND STROPHANTHINE AS ANÆSTHETICS.

The search for new local anæsthetics continues. Panas (*Union Médicale*, 1890, p. 272) has studied the local action of strophanthine and ouabaine upon the conjunctiva, and finds that:

Ouabaine, while producing anæsthesia in the rabbit, has no effect on the human eye.

Strophanthine, although superior in its action to ouabaine, has irritant properties which render it less serviceable than cocaine.

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital; Assistant Surgeon, Brooklyn Throat Hospital; Instructor in Diseases of the Nose and Throat, New York Post Graduate Medical School and Hospital.

THE OBSTRUCTIVE FORM OF LARYNGEAL TUBERCULOSIS WHICH SIMULATES BILATERAL ABDUCTOR PARALYSIS.

Percy Kidd (*Brit. Med. Jour.*, March 29, 1890) reports six cases of stenosis occurring primarily at the rima glottidis, and depending not on the amount of swelling, but on the mechanical fixation of the vocal cords in the position of phonation. In these cases the laryngeal examination showed the vocal cords separated about one-eighth of an inch, congested and showing no movement with inspiration. On phonation closure of the glottis ensues. Epiglottis and ary-epiglottic folds swollen and infiltrated. In three of the patients ulceration existed to a considerable degree.

In one case upon which an autopsy was performed the following conditions were found in addition to the above:

The mucous membrane of larynx infiltrated and irregularly but superficially ulcerated, the left ventricular band being especially swollen. The apex of left arytenoid cartilage was exposed by the ulceration. A small red sessile tumor, containing giant cells and tubercle bacilli, projected from the internal aspect of right arytenoid cartilage. The vocal cords were almost in contact. Both arytenoid cartilages were fixed. The crico-arytenoidei postici muscles thin and pale and interspersed with yellow lines. On microscopic examination the fibres of these muscles proved to be almost devoid of striation and contained oil globules and coarse granules. Both arytenoids were firmly fixed by a tubercular

growth that extended down to the perichondrium. This explains the immobility of the vocal cords. This fact is also important, that the posterior crico-arytenoid muscles showed more marked degeneration than the lateral crico-arytenoid muscles.

It is probable that the effects of the peri-arytenoid inflammation was first felt by the abductors, resulting in impairment of their function. This condition, aided by contraction of their antagonists the adductors, led to approximation of the cords, which became permanently fixed in their new position by the increasing infiltration. Horsley and Semm have demonstrated that the crico-arytenoid post. muscles lose their direct electrical excitability before the laterals, and the former may be considered, therefore, the more vulnerable muscles. In all the cases reported there can be little doubt that the want of mobility of the vocal cords was due to interference with the crico-arytenoid articulations.

The severe and abiding nature of the obstruction clearly points to some operative means for relief. Tracheotomy was performed in five of the cases, but the results were not satisfactory, although the lives of the patients were prolonged.

Where stenosis of the larynx is caused mainly or entirely by fixation of the vocal bands near the median line, thyrotomy and excision of parts of the rigid cords would be justifiable if we can satisfy ourselves of the absence of disease in the lungs. The danger of necrosis of cartilages is no doubt very great in tuberculous patients, but this complication is less likely to be produced by simple splitting the thyroid cartilage than by persistent irritation of the tracheal tube.

Fixation of the vocal bands in the median position, simulating bilateral abductor paralysis, may occur in tubercular disease of the larynx as the result of three different causes:

1. Plastic infiltration around the arytenoid cartilages leading to adhesive perichondritis and spurious ankylosis.

2. Ulceration, followed by morbid adhesion of the altered vocal cords.

3. Suppurative crico-arytenoid arthritis.

A possible fourth is the existence of non-suppurative adhesive arthritis.

In all cases of this description some surgical measure is indispensable, consequently an early recognition of this condition is clinically important.

A METHOD OF CORRECTING ADHESIONS BETWEEN THE SOFT PALATE AND PHARYNGEAL WALL.

C. E. Nichols (*Jour. Resp. Organs*, Feb., 1890). All previous methods heretofore advised have had one fatal defect, namely, they do not prevent reproduction of the adhesions. The line of adhesion

generally occurs in the situation of the faucial pillars below the palatal level. This method obviates the possibility of reformation of adhesions by the establishment of a firm cicatrix at the base of the proposed incision by means of a seton left in situ until a cicatricial eyelet is made at the outer angle and the tissues are in condition for operation. An incision is made in the median line, cutting down upon the end of a curved steel bougie passed into the naso-pharynx as a guide. A staphylorrhaphy needle, armed with four to eight strands of coarse silk suture, is passed through the median incision into the naso-pharynx back of the adhesion and out through the adhesion into the oro-pharynx, just at the lateral wall of the pharynx. The suture is then tied and the knot slipped around into the naso-pharynx. The suture is moved slightly each day and in two weeks a canal is formed of cicatricial tissue of larger diameter than the bundle of threads and perfectly healed. The tissue between the two openings is then cut and the parts kept dilated until healed. No abrasion must be made in the line of the canal or the operation will be nullified. Pain of the procedure is slight and the hæmorrhage is easily controlled. Some nausea and gagging are at first produced by the presence of the loop, but the pharynx soon becomes tolerant of the foreign body and deglutition is but little interfered with.

ACUTE HÆMORRHAGIC GLOSSITIS.

Holger Mygind reports a case of this nature as the first on record. The initial symptoms were loss of appetite, rigor and fever, followed by bleeding from nostrils. Within an hour the patient felt pains in his tongue, which became black and swollen until articulation was extremely difficult. He vomitted considerable blood at short intervals and was troubled by abundant secretion of viscid saliva and mucus.

On the third day the tongue presented the following appearance. The tumefaction marked, especially on right side, the two sides being separated by a deep gutter-like depression. The color of the upper surface of the tongue was a dark blue, except a narrow strip on margin, which was normal in appearance. The mucous membrane of the floor of the mouth (*sulcus alveolo-lingualis*) was much swollen from effusion of blood, the papillæ being especially prominent, looking like two dark-blue shining grape-like bodies, situated on either side of the *frænum lingvæ*. The palate, arches, the glosso-epiglottic ligaments were not involved. No swelling of the glands. The glossitis continued unchanged for four days and then subsided, and on seventeen days from commencement of attack the tongue and floor of mouth presented a normal appearance. That this was not a case of simple hæmorrhage is proved: 1. Because the lesion had an inflammatory

character, being accompanied by general symptoms. 2. Because both sides of the tongue were impaired by the disease. 3. Because tumefaction appeared throughout tongue, whether accompanied by blood or not, showing that the swelling was not caused by blood alone. 4. No spot could be considered as source of bleeding, and no traumatic lesion could be detected.

That the inflammation took a hæmorrhagic character can be explained by the fact that the patient suffered from chronic alcoholism, a disease which disposes to fragility of the blood-vessels.

EXTERNAL ELECTRIC TREATMENT OF LARYNGEAL DISEASES.

J. Solis Cohen (Amer. Jour. Med. Sciences, Feb., 1890). No organ is more accessible from exterior than larynx. Obdurate syphilitic scleroses can be resolved and indurated papillomas absorbed under the influence of the induced current. Unsupportable cough has rapidly subsided, with permanent diminution of the intensity, of the larynx, by passing an electric current transversely through the larynx. Small moistened compresses are used at the side of the larynx, upon which are placed button-shaped electrodes two centimetres in diameter. The free surfaces between the compresses are first carefully dried and then rubbed over with a drop of oil to avoid side currents.

ANÆSTHETICS IN NASO-PHARYNGEAL OPERATIONS.

Fredk. W. Silk (Jour. Lar. and Rhinol, Vol. III., No. 5). The use of cocaine in this locality, if possible, is uncertain, from practical difficulty in injecting drug at the seat of operation or even making a thorough external application; also as the majority of patients are children or nervous women the sight of instruments and blood are as great a disturbing element as the pain.

Nitrous Oxide.—The use of this agent in this department of surgery is capable of great extension. It is pleasant, safe, and can be administered in any position; its disadvantage is that its effects are very transient, and since it must be inhaled pure and absolutely undiluted with air it is difficult to maintain the narcosis in naso-pharyngeal operations.

Ether may be safely used alone or as an adjunct in the production of anæsthesia by nitrous oxide. This latter admixture has the advantage of hastening the development of anæsthesia, abolishing the stage of excitement, diminishing the bronchial irritation, and in short operations lessening the tendency to sickness and unpleasant after effects. Also ether may be administered with the patient semi-recumbent or erect.

The disadvantages of ether are :

1. An undue amount of spasm and bronchial irritation, especially in old people and children.
2. The hæmorrhage and mucous secretions are increased.
3. The use of ether is not permissible in neighborhood of galvano-cautery.

Chloroform has been long the routine anæsthetic for naso-pharyngeal operations. The following claims are made in its favor :

1. It is safest for children. (A proposition to which the author does not agree.)
2. It is simple to administer and narcosis resulting is easy to maintain.
3. Turgescence of mucous membrane is less than when ether is used.

The primary narcosis is more profound. The objections to the use of chloroform are weighty.

1. Chloroform being only slightly diffusible may collect in a concentrated state above the larynx or in the lungs. Hence attacks of syncope or apnœa may occur without warning during its administration or even after it is withdrawn.

2. The after-effects of chloroform are often very prolonged, profound prostration and digestive disturbance may continue for days.

3. Its administration in any but the recumbent position is quite inadmissible.

Summary.—1. The possibility of using nitrous oxide should always be considered in naso-pharyngeal operations of short duration.

2. Failing in this the use of ether or by preference the combined method, should be carefully considered.

3. Chloroform, especially in prolonged operations, should be limited to the primary induction of narcosis, and ether should be substituted at as early a stage as possible.

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

THE VALUE OF THE GRADUATED BATH AND PACK IN THE TREATMENT OF CATARRHAL PNEUMONIA IN CHILDREN.

By Drs. Edward P. Davis and Thomas G. Ashton (*Annals of Gynæcology and Pædiatry*, April, 1890). The object of the paper is to call attention to the value of the graduated bath and pack in the treatment of pneumonia in children in connection with other remedial measures,

but especially in the prevention of the congestion of the capillaries of the lungs. Many of the children treated were ill-nourished and anæmic foundlings. Twelve were recovering from whooping cough. Ages of all the children ranged from twelve weeks to five years. The method of treatment is not valuable as a routine practice and is to be administered under intelligent supervision.

The method is as follows: "Place the child in a bath of warm water at a temperature of from 98° to 105° F., into which sufficient mustard has been placed to redden the child's skin; a cloth wrung out in cool water is placed upon the head. It is allowed to remain in the bath from five to twenty minutes. The duration of the bath will depend upon the child's temperature, the frequency of its respiration, and the presence or absence of coma or delirium. If thirsty in the bath, a teaspoonful of water may be given or whiskey and water or aromatic spirits of ammonia and water. When the child is removed from the bath, it is wrapped in a warm blanket, and a can of hot water is placed at its feet, and, if case is severe, a piece of soft flannel is wrung out of water of temperature of room, sprinkled with spirits of turpentine or canphor and wrapped about child's chest, and allowed to remain on until dried by the heat of the body. Stimulants are freely given if prostration is marked. Where fever and stupor are excessive, bath may gradually be cooled down to 85° or 80° F."

The indications for this method of treatment have been a rise in temperature above 102° F., rapid pulse and respiration, with disturbance of the cerebral functions. "It has been substituted for the use of emetics and nauseating expectorants, and the results have been such as to justify its employment in the future. It is not claimed that this method is original, but reference to the literature of the subject and the methods at present employed at the polyclinics of Europe lead us to believe that it is not so frequently used as might be profitable to physician and patient."

SIMPLE TRUSS FOR HERNIA IN CHILDREN.

Mr. Edmund Owen (Medical Press and Circular, Feb. 12, 1890). Mr. Owen urges the expediency of regarding congenital inguinal hernia not as a pathological entity, but merely as a sign or symptom. "Generally it is but the sign of arrested development in connection with the obliteration of the funicular process of the peritonæum; often it is a symptom of some oft-repeated and straining expiratory effort, such as that associated with whooping-cough, diarrhœa, chronic constipation, rectal polypus, vesical calculus, or impeded micturition." Mr. Owen relates a case where, by the pressure of an appropriate bandage for the relief of a troublesome umbilical hernia, he produced an inguinal hernia.

For tender infants, and where a spring truss cannot be worn, he suggests the use of a skein of wool, as advised first by Mr. Coates, of Salisbury. "A folded skein of Berlin wool should have the loop laid over the emptied inguinal canal, the ends being carried across the abdomen above the crest of the ilium, of the sound side, across the back, and then forward along the crest of the ilium of the ruptured side. The ends are then passed through the inguinal loop, and carried backward around the inner side of the thigh, and across the buttock, to be firmly secured to that part of the skein which is already just above the great trochanter."

The infant can be washed with this truss on, a fresh one being subsequently applied. The writer states that the nurse soon learns to apply it, it does not make the child sore, and with average skill and care it can be made a serviceable compress.

INFANT DIETETICS AMONG THE POOR.

J. Howe Adams, M. D. (*The Medical and Surgical Reporter*, April 5, 1890). The writer, after alluding to the satisfactory experience and practice at the present time in the hand-feeding of infants in general, with sterilized milk, cream, pepsine, pancreatine, etc., adds the following: "But the problem of artificial feeding for the babies of very poor and ignorant people is much more difficult; for the residents of the alleys cannot afford sterilizers, however simple or cheap, or, if they were provided, would be restrained from using them through lack of time or faith or from stupidity or carelessness. . . . The difference between bottle-fed and breast-fed babies of poor women is most striking: the breast baby is generally hearty and vigorous; the other, puny, weak, and miserable."

Food must be inexpensive, simple to prepare, easy to keep, and fairly nutritious. First it is necessary to start with good milk. The furnishing of milk which has been sterilized, in large quantity, the author does not consider feasible. He advocates the plan of giving the mother slips with printed directions upon them. On one slip is printed:

"From birth to the age of six months six or seven meals are to be given in twenty-four hours. The food is made of—

"1. Milk. 2. Lime-water. 3. Arrowroot-water.

"To be mixed as follows: Take eight tablespoonfuls of milk, four tablespoonfuls of lime-water, and four tablespoonfuls of arrowroot-water; place in a bottle with a lump of sugar; warm the whole by standing the bottle in warm water. Use immediately."

On another slip of paper is placed:

"Arrowroot-water is made by taking one and a half teaspoonfuls

of arrowroot, rubbing it down until smooth with a teaspoonful of cold water. Then add one pint of boiling water, stirring all the time. . . . To sterilize the milk, it is directed as soon as it is obtained from the dealer, to boil it and to cork it in an air-tight jar (for which purpose a Mason's preserving-jar, or a beer-bottle *thoroughly cleaned*, will do), and to place it immediately in a cool place, either a cellar or an improvised ice-chest. . . . In ordering broths, soups, etc., it will be found that, although strenuously insisted upon, they will be rarely prepared or given. Where some simple form of nourishment must be devised, egg-albumen serves well. Take the white of an egg, stir it in a cup of cold water until it is as thoroughly dissolved as possible, then strain out the flakes which remain. The child can be fed on this every hour or so. In the few cases in which I have tried rectal alimentation among poor children, it has met with small success. The parents look upon it as the height of folly, so that it usually serves only to disturb the child, which is probably moribund by the time this process is tried.

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

THE LEPROSY QUESTION.

We have thought it best to give the following abstracts in this, as being in line with the matter in the last, number of the JOURNAL. It may be remarked, *en passant*, that the views of nearly all good dermatological observers coincide as to the beneficent effect of changed as well as improved climate and hygiene in this malady. There certainly would seem to be no occasion for an alarmist propaganda in this country; while as certainly, also, it would appear that a warm, moist climate and unhygienic surroundings lead to greater chance of contagion, inoculation, and consequent propagation:

A CASE OF LEPROSY APPARENTLY CURED.

(Dr. G. H. Fox, New York: N. Y. Med. Journal, April 12, 1890, p. 410.) In the above paper—read before the State Med. Society, at its last meeting, and which met with approval by all the dermatologists speaking on the subject then—the author affirms, and seeks to prove, the distinct amenability of leprosy to improvement, and sometimes apparent cure by hygiene and treatment, as also chiefly by bettered (*i. e.*, changed) climatic conditions.

The case he quotes was that of an adult male, born in the Sandwich Islands, of American parents, who had suffered many years with gradually increasing subjective and objective symptoms of this disease. He had fled from the Islands about 1883, fearing confinement in the leper colony at Molakai, and had almost ever since been under his observation. It is sufficient to say here, in brief, that amelioration of his condition has been progressive and constant up to date of last hearing from him during the present year. He quotes other cases, etc., in his paper.

The point of his argument seems to lie in the following two extracts, though he gives some qualified commendation of the medicinal treatment employed, viz. :

“Another interesting point arises in connection with this case, as to the relative importance of medicinal treatment and a change of climate. • I am inclined to attach the most importance to the latter. It may seem difficult to explain why a disease depending upon micro-organisms should be benefited by external agencies, but the benefit to lepers resulting from a change of climate has been too frequently noted to admit of doubt.”

(Why would this reasoning not apply to phthisis pulmonum also then, in which we know such marked benefits result from improved climate, etc. ?—S. S.)

Further he says: “When a man affected with leprosy is taken from his home and friends, pronounced unclean, immured in a lazaretto with many loathsome fellow-sufferers, and given to understand, as is usually the case, that death is the only portal of escape open to him, the impression upon his mind is such as to counteract the effect of all remedies, and under such circumstances nothing short of a miracle could be expected to effect a cure of leprosy.”

The following seemingly would hardly come under the head of “Progress in Medicine,” it having appeared first in 1870 (see *British and Foreign Medico-Chirurgical Review*, 1870), but it is interesting, and highly important to note how it exactly tallies with experience and conclusions of the best men to-day. We quote the *Review* entire, as it cannot be abbreviated with advantage. It is entitled

LEPROSY IN THE UNITED STATES.

Dr. Holmböe, surgeon to the General Hospital at Bergen, in Norway, made in 1863 a tour of Illinois, Iowa, Minnesota, and Wisconsin, in which States our Norwegian emigrants principally settle. Investigating the leprosy prevalent among them, he came to the following conclusions :

(1) There are among the Scandinavian population in North America no instances of leprosy attacking those born in the country.

(2) There are among the Norwegians who have immigrated not a few who are now the subjects of leprosy.

(3) Most of the leprosy patients were already leprotic when they came over.

(4) In not a few cases, also, the leprotic symptoms had their first outbreak in America. This has happened, however, to those who were adults at the date of their immigration, and who had, before coming over, lived in such a manner as to predispose to the disease, and who also had not profited to the same extent as most in the general advantages life in America offers.

(5) Leprosy, when imported into America, has, as a rule, a *longer* and *milder* course than in Norway, and shows also a stronger tendency to spontaneous improvement and recovery.

(6) Life in America will in general avert the outbreak of leprosy, so that many will there remain wholly free who, according to all estimate of probabilities, would have suffered had they remained in Norway.

(7) Climate has certainly a great share in effecting this change. It is not nearly so rigorous and inclement in America as in Norway, and thus does not make the same demand on the vital powers of resistance.

(8) It is probable, however, that the altered mode of life has quite as large a share as the climate. The immigrants are, in a general way, far better off than they were in Norway; there is not the same necessity of exposing themselves so much to the influence of climate, and when exposure is necessary they are better protected.

(9) Leprosy will disappear amongst the Norwegian population in the States, or will be found only in isolated imported cases. It will not be transmitted from generation to generation as an endemic disease.

Such are the opinions of a highly qualified investigator on this important subject. Even if a little sanguine, they are probably near the truth; at any rate, they have not as yet been met by any evidence on the opposite side. Their value, as indicating that the duration of the leprotic diathesis under a favorable change of conditions is not without limit, is very great.

(We may perhaps be permitted to refer again to remarks in the last number, referring to the will of Bishop Dutton. We personally know well the section of England which is there referred to. Deaths from destitution or exposure are probably as rare there as in any part of the civilized world. Climate remains the same; the laws as to segregation of lepers, etc., were probably only carried out in the loosest manner: yet the disease, once apparently endemic, has died out. It seems to speak volumes for improved hygiene and preventive medicine.—S. S.)

BACTERIOLOGY.

BY B. MEADE BOLTON, M.D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

PROTECTIVE INOCULATIONS.

Pasteur was the first to make extensive experiments with a view of obtaining vaccines for protective inoculations for various infectious diseases. He was led to these experiments by Jenner's discovery of vaccination for small-pox. But it is evident that Pasteur's inoculations differ from vaccination for small-pox, for Pasteur uses cultures of the micro-organism, causing the very disease for which he inoculates. In vaccination for small-pox, as is well known, the infectious material of a disease similar to, but not identical with, small-pox is used. Pasteur's inoculations are therefore rather to be compared to the inoculations formerly in use, where small-pox virus was used to inoculate with. The object Pasteur seeks to obtain is to so modify the infectious material that it will produce only a mild form of the disease in question. This problem is very difficult of solution, and the most serious obstacle is the variable susceptibility, not only of different races of animals, but also of the different individuals of the same species: infectious material which causes a mild attack of the disease in one animal sometimes—exceptionally, it is true—causing death in another animal of the same species. Although this difficulty has not yet been overcome, the possibility of attenuating infectious material, so that it will produce only a mild form of disease, is well established. As yet these inoculations are of more interest from a scientific than from a practical point of view, at least in human medicine, and the practical utility of protective inoculations in animals is still an open question.

Pasteur found that the artificial attenuation of pathogenic micro-organisms can be effected in two ways: In the first place, by the use of some agent injurious to the bacteria, such as heat, chemical agents, etc.; these cause, according to Flügge, a degeneration of the organisms, and the virulence returns in a longer or shorter time when the organisms are again placed under favorable conditions. In the second place, attenuation may be effected by cultivating the organisms for some length of time under unusual conditions—for example, in the bodies of animals not susceptible to natural infection. The attenuation obtained in this way seems to be much more durable than that obtained by the first method, and not so likely to be lost by cultivating the attenuated cultures under normal conditions. Besides the methods of

inoculation with attenuated cultures, it has been attempted to render animals immune by inoculations of the products of the growth of bacteria—*i. e.*, the so-called ptomaines.

The first disease for which Pasteur obtained attenuated virus was chicken-cholera. He found that cultures which had stood for several months exposed to the air—*i. e.*, merely plugged with cotton—had weakened in virulence. These old cultures produced on inoculation only a local abscess, which ended in resolution in a few weeks, but the chickens so inoculated were found to be protected from subsequent attacks and also from the disease by inoculations of virulent material. Pasteur attributed the weakened virulence to the action of the air, for he found that, in cultures of chicken-cholera which were sealed up, the full virulence was retained.

Pasteur's next successful experiments on attenuation were made with anthrax, or malignant pustule. The method of attenuation in this case was different from that for chicken-cholera. Cultures of anthrax bacilli were grown at 42° to 43° C., and it was found that these cultures were much less virulent than cultures grown at lower temperatures, and that animals inoculated with them were for the most part protected. Pasteur's inoculations for anthrax have been tested on a very large scale by different experimenters with various results.

The third disease for which Pasteur obtained vaccines was rouget du porc (swine-erysipelas), an infectious septicæmia causing great ravages among the hogs in France. The method of attenuation in this case is to inoculate rabbits with virulent cultures. It is found that the micro-organism becomes attenuated after having passed through the body of a rabbit. Cultures obtained by inoculation from rabbit to rabbit finally become so attenuated that they will no longer kill. But cultures attenuated in this way protect hogs when inoculated.

Kitt has put all these methods of inoculation to the test. He found that vaccines for anthrax obtained direct from Pasteur were not capable of protecting the sheep he inoculated. He then inoculated guinea-pigs with the vaccine, and obtained cultures from these guinea-pigs which produced a fatal anthrax in sheep. The organisms had increased in virulence in passing through the guinea-pigs, and, although these cultures were virulent for sheep, they rendered cattle immune. But the fact that Pasteur's vaccines were sufficiently powerful to protect the sheep which Pasteur inoculated and were not capable of protecting the sheep which Kitt experimented with, shows the practical difficulty of obtaining cultures of just the right strength. Krajewski's results with the same vaccines were also unfavorable. Hess obtained rather more favorable results. Kitt found Pasteur's observations on chicken-cholera to be correct, but strongly advises against the use of vaccination. He

points out that the excreta from inoculated fowls is virulent for other animals, and, as in the case of anthrax and other bacterial diseases, the organism increases in virulence when passed through the body of susceptible animals.

(To be continued.)

PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.,

Associate Director of the Department of Physiology and Experimental Therapeutics,
Hoagland Laboratory, Brooklyn.

SYZYGIUM JAMBOLANUM: A NEW REMEDY FOR DIABETES.

Dr. C. Graeser, of Bonn (*Experimentelle Untersuchungen über Syzygium Jambolanum gegen künstlichen Diabetes*), came in contact with this plant (tree) in Java, where the natives use the fruit and bast as a remedy for diarrhoea and diabetes. (In Europe it goes by the name of jambul.) He has made a study of the physiological properties of the extract of the fruit, and finds that there are no deleterious properties which would contra-indicate it. He also studied its effect on diabetes produced artificially, by the method of von Mehring, viz., by giving phloridzin. In some cases he gave phloridzin first, and, after diabetes was marked, gave his extract of jambul; in others he gave the drugs combined.

In the first class of experiments he found that jambul reduced the sugar in the urine, in some cases ninety per cent. and nearly always more than half.

In the second class of experiments he found that phloridzin alone gave 5.89-12.45 grms. of sugar, while combined with jambul the corresponding figures were 1.50-2.91. Even in large doses, jambul produces no injurious effects, and the author recommends it for clinical trial.

He also gives a reference to a review of a case reported by Mahomed (*Practitioner*, 1888, p. 416), where jambul was given to an old diabetic patient, with the result that sugar disappeared from the urine at the end of a week, but returned upon discontinuing the drug. The patient was then kept upon jambul for several months, after which diabetes did not return upon stopping the administration of the drug, and had not returned up to the time of reporting the case, about a year and a half thereafter.

A NEW DIURETIC.

The *Comptes Rendus de la Société de Biologie* (Dec. 6, 1889, pp. 676-680) contains two articles on the use of the bark of *sambucus nigra* as a diuretic: "Du sureau comme médicament diurétique," by M. Georges Lemoine, of Lille; and "Recherches sur l'action physiologique de l'écorce de tige de sureau," by MM. Combemale et Dubiquet, of Lille. The last-named gentlemen refer to the dictionaries of Mérat, Sens, and Dechambre, and to the recent clinical observation of Bastaki, of Bucharest—all of whom claim diuretic properties for this drug—and have made a careful study of the same in the laboratory.

They have worked with the first and second barks together, and with each of them separately. A decoction of the whole bark produces a marked diuresis in dogs and guinea-pigs. The urine is extraordinarily clear, and the diuresis lasts about four hours; the temperature falls, and there is a diminution of the pulse and of the respiration.

A decoction of the first bark alone produces diuresis, but not so marked as that of the whole bark, and far less marked than a decoction of the second bark.

On making a decoction of the second bark, the authors found that a volatile principle was given off, and this bark they studied both in decoction and infusion. The decoction was found to have marked diuretic properties, being two to three times stronger than a decoction of the whole bark. The temperature rose one-half degree, C. (= nearly one degree, F.), in thirty minutes, and then slowly fell to a few tenths below normal; and the pulse fell gradually twenty-four beats in five hours.

When an infusion of the second bark is given instead of a decoction, the diuresis was found to be less marked and only to occur after a longer interval after the administration of the drug. New symptoms, however, appeared in vomiting and diarrhœa, which seemed to be the predominating effect of the infusion.

The vomiting began about thirty minutes after giving the drug, was without effort, and did not occur at short intervals. When not obscured by food, the vomit appeared to be mostly a whitish mucus. The diarrhœa lasted several hours, was purely intestinal, and, after the evacuation of the solid contents of the intestines, the fæces were soft, without being watery, brown, and of a bilious aspect; the temperature and pulse are affected as by the decoction. The day after the experiment the animal was always perfectly well. These experiments would appear to show, therefore, that the second bark of *sambucus nigra* was the most effective, and that it contained, among other things, a volatile principle which produced vomiting and diarrhœa, and a non-volatile principle which

is a powerful diuretic, and the drug recommends itself for clinical trial.

M. Georges Lemoine, of Lille, made this trial, and gives the following observations: The drug was always employed as a decoction of the second bark, prepared by boiling a handful of the fresh bark (old bark loses its strength) in a litre of water, and giving to the patient a half litre to one and a half litres a day. He finds the quantity of urine to be increased from 400 c.c. to 1,500 and 2,000 c.c., and in some cases as much as 3,500 c.c. He has obtained his best results in albuminuria from nephritis, and has cured albuminuric patients having general anasarca, œdema of the lung, and hydrothorax. It acts well in ascites which accompanies tubercular peritonitis in children, but has little effect on ascites due to cirrhosis of the liver. He also obtained six watery stools a day from his patients, and points out this additional advantage, in removing the excess of fluid by the bowels as well as by the kidneys. Lemoine fails to find the same action on the heart of man that Combemale and Dubiquent found in their animals. He says: "This is not a cardiac drug, but essentially a diuretic, and owes its properties to an action upon the renal epithelium."

CORRESPONDENCE.

WEIGERT HOT AIR TREATMENT.

The following communication was received from the late Dr. Cary just before his death, with the request that it should be published:

To the Editor:

In the "Criticism of the Weigert Hot-Air Treatment of Pulmonary Tuberculosis," printed in your April issue, there occurs an error of fact and position in the closing sentence of the fourth paragraph of the recapitulation. It should read: *Recent advices from Germany inform us that by accurate measurement the actual intrapulmonary temperature is DEPRESSED $\frac{1}{2}^{\circ}$ to 1° .*

This statement was intended as a foot-note confirmatory of the forecast of the, as printed, preceding part of the paragraph, the fact not having come to our knowledge until several months after writing the "Criticism."

By making this correction you will oblige,

Yours respectfully, WALES L. CARY.

826 Lafayette Ave.

OBSERVATIONS IN THE ORIENT.

BY E. P. THWING, M.D.

To the Editors of the BROOKLYN MEDICAL JOURNAL.

Leaving Brooklyn, September 19th, five days' travel brought me to the Golden Gate; about eighteen more to Yokohama. Fifteen days' travel through Central Japan furnished exhilarating experiences. Five days took me to Hong Kong, and after a residence of two months in Canton Hospital, about thirteen days to Bombay completed the itinerary of 13,000 miles thus far. A zigzag journey through India, from Delhi, Agra, Cawnpore, Lucknow, Benares and Calcutta to Madras and Ceylon, back to my present hospital home will add 6,000 miles more to the above record.

Swift steam and swifter lightnings dwindle distance and abolish time. The globe-trotter may reduce Jules Verne's once fabulous figures to 75 or fewer without buying an elephant or burning a steamer's wood-work to make good speed. Comfort, too, is had. Let me, however, advise—for the editors have asked of me "a chatty letter"—that one always travel east. Fourteen trips across the Atlantic and my experience of the "mighty, mad and changeable Pacific," when they are *crossed* the wrong way, convince me that it is wiser to girdle the globe, meeting the sun rather than following it. You can reach London in seven days from New York, and in thirty days more, via Brindisi and Columbo, you reach Hong Kong. Could you make close connection with a good steamer, you would have but eighteen days before you will meet the vestibule train that goes from San Francisco to New York in four days and twenty one hours. The "China" recently came from London to Hong Kong in thirty days, and went from Japan to California in twelve and a half days. Head-winds always are expected going westward round the globe.

A word about expenses. From San Francisco to Hong Kong the fare is about \$200 gold; thence to Bombay, \$200 Mexican, *i. e.*, \$150 gold. From Bombay to London, from £52 sterling, upwards, according to accommodations. Excellent rooms, table-fare and society are had on these Oriental steamers in the second saloon with the privileges of the forward spar deck and the port side of the hurricane or promenade deck. You have a Lascar boy to fan you with the punka as you eat your ice cream, and a European servant to bring you your cup of coffee before you dress in the morning. You have the windscoop to cool your room at night, and ports that are not port "holes," but windows, four feet in diameter, kept open too, from one week's end

to another. A new piano is not to be forgotten in my enumeration of luxuries enjoyed as a passenger in the second saloon of the "Oriental" of the Peninsula and Oriental S. S. Co. She is a new seventeen-knot boat, though not pushed at that rate, and the broadest and roomiest ever met with since my foreign voyages began in 1855 with Cunard side-wheelers.

Well, what of the East? I answer: "The morning light is breaking." An American physician who, under imperial supervision in Japan, has trained and sent out into successful medical practice thirty young men of that country, told me in Yokohama that in no feature had the intellectual awakening of that empire been more marked than in the line of Western medical science. My table mate is the wife of one of the professors of the new medical college which the King of Siam is about to open at Bangkok. One of the princes, coadjutor of the king, has had a European education. Seven students will shortly start for America to take a medical course. They will spend eight years. China is not to be left behind in this *renaissance*. If the King of Siam can afford to give his court physician, a Scotchman, \$8,000 a year and the American and European professors in the college under his patronage a remuneration similarly generous, in addition to what their other practice yields, the neighboring Oriental courts feel the same impulse. It matters not whether it is a *vis a tergo* or a *vis a fronte*, the impulse towards a broader national life is unquestionable.

Just before I reached China the emperor surprised his people by not only sanctioning, but enjoining, a project, which has hitherto been strenuously opposed, the immediate construction of a railway line across the empire. The phrasing of his decree is emphatic. "The sovereign thinks that railways are essential to make a country prosperous." It would be easy to fill pages with personal observations in the East which illustrate the advance of educational ideas, particularly in medical science.

One day a Mandarin millionaire, holding a high post under the emperor, came to us at Canton Hospital asking the professional services of a lady physician for his mother, hundreds of miles away. Dr. Fulton went and was treated with special consideration. Contrary to Chinese etiquette, she was entertained at the same table with the gentlemen of the household and in the European style of table service. She and the wife of another medical missionary held services in their spacious apartments, attended not only by native Christians, but by many who heard for the first time "the doctrine" of one God. The illustrious patient was cured and many others of the family and neighborhood successfully treated. In addition to her fees, she was decorated with two gold medals, bearing, in Chinese characters, laudatory testi-

mony to her ability. The Hong Kong papers properly remark that this is a graceful acknowledgment of the superiority of Western science on the part of those high in social and political influence. Other gifts followed after her return, and a new interest is awakened in this family clan of 400 in regard to what American ideas on other subjects represent.

While visiting a native hospital at Fatshan I learned from an English medical man that he had been solicited to treat the manager of this very hospital. Confessing the uselessness of native medications—for they have no surgery—he paid Dr. W. a good fee for radical treatment of hæmorrhoids.

Dr. J. G. Kerr, of Canton Hospital, has been thirty-five years an able physician and surgeon, and the value of the work in its humane and beneficent effect is well expressed in the remark of a British consul during the war. "This hospital is a safer place than a gunboat." The inherent prejudice of the Chinese to any dismemberment of the body—this being related to a supposed future disfiguration—the absence of railways and, to a great extent, machinery in China, prevent much of the surgery common with us at home. Operations for stone are common. I have aided Dr. Kerr in two cases of ovariectomy. The plan we are maturing for the Insane Hospital receives approval of all intelligent natives and foreign residents. Subscriptions of money have begun. Who from Brooklyn or New York will offer himself as a personal contribution? A residence in the East is not without its attractions.

The last three or four days have been spent in Ceylon, which in medical culture and enterprise is said to be ahead of India. Dr. Green from the States was a pioneer. The Ceylon Medical College has trained 250 or more students, some of whom went abroad to take degrees, 75 qualified here and others entered the 120 hospitals and dispensaries scattered over the island, where lepers, lunatics, contagious diseases, lying-in-women—170,000 applications annually—are treated. I visited, day before yesterday, 367 men and women in various stages of mental disease in the lunatic asylum at Columbo, conducted by Dr. Hallock, who is a Tamil, a graduate of Ceylon and of Edinburgh, and with his colleague, Dr. Spence, a European, is a member of the British Medical Association. He speaks English and puts it into even more piquant brevity than is common with us, as where, pointing out patients, he said: "This is a case of G. P." But it is time to say "*claudite rivos.*" The mercury is persistently in the eighties, albeit February will be here in a few hours. How enjoyable, for variety, a blizzard would be!

MEDICAL CHARITIES.

BROOKLYN, N. Y., May 15, 1890.

To the Editors of the BROOKLYN MEDICAL JOURNAL.

GENTLEMEN:—It was my privilege some time since, in response to a courteously extended invitation, to address a public meeting held for the purpose of promoting a new medical charity in a rapidly growing part of our city. In that address I quoted certain statistics more or less familiar to the medical profession, but not known to the laity, and endeavored to demonstrate Brooklyn's need of such institutions. I have since received numerous communications, many of them from men whose judgment I hold in high regard, criticising my action in the matter. Now, it is to be borne in mind that the address referred to was delivered to a miscellaneous audience, and it will certainly be proper to institute certain inquiries here which would have been manifestly out of place there. First. What is a charitable medical institution? It would perhaps be approximately correct to answer: A properly-equipped institution where relief is given or attempted to be given to men and women whose financial condition is such as to render them unable to secure the private care and attendance of a skilled physician. Surely, an improperly and insufficiently-equipped institution can hardly be called a charity. An eye clinic without proper instruments for testing or operating on diseased eyes, or an orthopædic clinic without proper appliances for treating diseased joints, would hardly be charities. A true charity would demand the closing of such institutions in the interest of a suffering and credulous humanity. If it could be shown that a city was possessed of a large number of alleged medical charities destitute of proper equipment to effect the work which they claim to do, would this prove that in such city there was no need of further well-equipped medical charities? Let reputable and broad-minded physicians, bearing this question in mind, carefully examine the numerous hospitals and dispensaries of Brooklyn, and they will find food for abundant thought.

Second. Is an alleged medical charity operated solely for selfish ends entitled to be called a charity at all? What is the animating spirit which produced and which maintains it? Who controls its affairs, one or two self-seeking M.D.'s, or a Board of Managers, composed of live and charitably-disposed men? What do the names of the "Board" as they are printed in the "Annual Report" stand for? Have they merely been loaned to the institution, at the earnest solicitation of the aforesaid M.D.'s and upon their solemn promise that no work shall be required, or do they represent men of "grit" and

"nerve" who do manage and control the work in question? Who is the chief beneficiary? Is it the public or some doctor who uses the institution as a side-door to his private practice? Is it charity to beguile the public into the support of an institution the first purpose of which is to prop up some weak physician who dare not take his stand upon his own merits, before the public and among his brethren? These are only questions. I might mention facts; but the physician who looks about him will soon discover the facts, and I shall be spared a painful recital. Indeed, every now and then we are treated to an *exposé* of some fraudulent or semi-fraudulent institution of the character hinted at above; then there is an outburst of indignation; the men whose names have been loaned or stolen enter their vigorous protest; and physicians who care for the honor of our profession are subjected to intense annoyance.

If the friends who have subjected my action in the matter already referred to to criticism will carefully analyze their feelings, they will find that their objection is not to honest and honorably-conducted medical charities, but to the numerous counterfeits which unfortunately glut the market. However much the honorable physician may decry the hypocritical and unworthy wearing of "sweet charity's" mantle, he will not antagonize the institution which, with proper appliances, is doing an honest and unselfish charitable work. And what is the best remedy for the evil of pseudo-medical charities? Surely it is a creation of real charities, which, under the law of "the survival of the fittest," shall crowd their unworthy competitors out of existence or compel them to better their ways. And in this work, which is eminently reformatory in its nature, who should be more profoundly interested than the medical profession itself? Let us think carefully before we pledge ourselves unreservedly to the doctrine, that there are too many medical charities in the City of Brooklyn.

Respectfully yours,

REUBEN JEFFERY.

87 South Ninth Street.

SICK BENEFIT SOCIETIES AND THE CENSUS.

The business of gathering the data in reference to sick-benefit, funeral aid, death-benefit and other kindred societies, has been placed in charge of Mr. Charles A. Jenney, special agent of the insurance division, 58 William Street, New York City, and all associations throughout the United States, whether incorporated or private, should assist by sending him the address of their principal officers.

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ORIGINAL ARTICLES.

ON THE PATHOLOGY AND TREATMENT OF AGGRAVATED HÆMORRHOIDS.

BY LEWIS S. PILCHER, M. D.,
OF BROOKLYN,
Surgeon to the Methodist Episcopal Hospital.

Read before the Medical Society of the County of Kings, March 18th, 1890.

In this communication I desire to speak only of the more aggravated forms of hæmorrhoidal degeneration, cases in which a considerable portion, or the whole of the circumference of the anal portion of the rectum has become so diseased that a vascular tumor of considerable size has been formed. In these cases, the surgeon has to do no longer with a simple varicose condition of the hæmorrhoidal veins, nor with a fairly well defined and circumscribed polypoid hypertrophy of the vessels and submucous connective tissue, but with a true angioma, which, although on its surface it may be more or less lobulated, in its deeper portion is formed by a continuous net-work of dilated vessels or cavernous spaces bound together by a varying amount of connective tissue.

The arterial supply of these tumors is very free; they are fed by the terminal twigs of the middle hemorrhoidal artery which descend to them almost vertically in the submucous coat of the rectum; these

arterioles display the same tendency to enlarge which is seen with vascular tumors in other parts of the body, and the result is that in the worse cases a dozen or more dilated arterioles of sufficient size to demand ligation may be met with by the surgeon in the course of an attempt to remove the tumor. The pulsation of these may often be felt beforehand by the finger introduced into the rectum above the growth. A certain quality of erectility is manifested by these tumors, in common with the more frequent and less aggravated hæmorrhoids, so that their bulk may vary considerably within certain limits according as they are more or less distended with blood.

These tumors always have a history of many years of development; not every case of neglected piles will develop into such a condition, but whenever this condition does develop there has preceded it a long history of piles that have become more and more aggravated with the lapse of years. In the six cases upon which this study is based, the patients were all in the prime of life, between 30 and 40 years of age, and in all but one their hæmorrhoidal troubles dated back to their early youth. This latter fact would indicate an original inherent developmental defect in the vascular network at the lower end of the rectum in each case as having been an important element in bringing about the ultimate extreme diseased condition. With one exception these patients were all persons of intelligence and education, careful of their persons, not given to excesses of any kind, and watchful to guard against anything which would tend to aggravate their condition; two were ladies of refinement and culture, two were clergymen, one was a printer and one was a laborer. These facts I mention simply from the corroboration which they give to the probability of the existence of a primary developmental defect as a predisposing cause of these extensive tumors.

Associated with the angioma proper will always be found more or less œdema and relaxation of the adjacent mucous membrane which go to swell the bulk of the tumor and predispose to its ready eversion through the anus. The sphincters become chronically stretched and weakened, a circumstance which has both its advantages and disadvantages. It lessens the suffering caused by the eversion or coming down of the tumor, and makes its reposition more easy, but it also aggravates the infirmity of the patient since the tumor is no longer securely kept up after it is replaced, but quickly comes down when the patient stands for any length of time or makes any straining effort at the anus, or there is any abdominal pressure as in coughing or sneezing. This weakness of the sphincters must also be remembered in forming a prognosis as to the results of operations for the relief of these tumors, for a considerable lack of power upon the part of the

sphincters may still remain after the angioma has been removed, causing some incontinence and favoring some prolapse of the rectum. The area of the rectal mucous membrane which is the subject of this angiomatous degeneration does not extend upwards very far. From an inch to an inch a half will be found to be its usual limit. The tumor is a superficial one, involving only the mucous surface and the submucous connective tissue, so that it may be readily enucleated from the sphincters. This enucleation is not likely to be complicated by hæmorrhage, for the reason that both the afferent and efferent vessels enter or leave the tumor at its upper margin and are confined to the submucous connective tissue coat in which they run.

The size which these tumors may attain is considerable; in one of my cases the mass that was rolled out of the anus by the patient at the word of command was equal to that of a good sized apple, somewhat flattened. In its turgid state, darkly livid in hue, with a fissured lobulated surface covered by bloody mucus, it presented an appearance that might have easily excited fears that it was a malignant growth. The patient, worn out by years of suffering and dribbling hæmorrhage, presented a cachectic look that would have tallied well with such a diagnosis.

During the past eighteen months, six cases have claimed my care which properly came within the class of aggravated hæmorrhoids, or hæmorrhoidal angiوماتa, which I have now so briefly and inadequately described. I submitted them all to excision after the method of Whitehead. It is to the merits of this operation in such cases that I desire very briefly to devote the remainder of this communication.

In the treatment of ordinary hæmorrhoids in the various degrees and conditions that they are met with, I have at times had occasion to resort to different devices, finding conditions that I believe are best controlled now by simple dilatation of the sphincters, now by injections of carbolic acid, now by the actual or potential cautery, now by the clamp and cautery, and now by the ligature. It is not infrequent that in the same case I resort at the same sitting to several of these measures. The only one of these methods that would commend itself to me as desirable to be used in removing the more aggravated hæmorrhoidal tumors now under discussion is possibly the clamp and cautery. The objection to the clamp and cautery is that it necessitates some subsequent sloughing and granulation, and in the extensive removal of tissue required in these cases might be followed by an undesirable amount of cicatricial contraction. Portions of the angiomatous tissue would not be included in the clamp, and their subsequent obliteration by inflammatory fibrous hyperplasia would be uncertain.

The feasibility of removing hæmorrhoidal tumors *en masse* by the knife was first demonstrated on a large scale by Mr. Whitehead, of Manchester, England, who reported to the British Medical Association in August, 1886, that he had up to that time, beginning in 1876, operated in that manner upon more than three hundred patients without a death, a single instance of secondary hæmorrhage, or one case where any complication, such as ulceration, abscess, stricture or incontinence of fæces had occurred; and further, that, to the best of his knowledge, every patient had been completely and permanently cured. His method of operating included anæsthesia, the lithotomy position, preliminary thorough stretching of the sphincters, division of the mucous membrane around the entire circumference of the bowel at its junction with the skin, exposure of the external sphincter, detachment of the pile-bearing membrane from the sphincters by scissors and fingers until healthy mucous membrane is reached, pulling down of the separated membrane and hæmorrhoids and cutting it away by cross incision, with suture of the free margin of the severed membrane, as fast as divided, to the free margin of the skin below, bleeding vessels being twisted as they were divided during the operation.

In January, 1887, Lange, of New York, reported a number of cases in which he had done a similar operation, the technique differing chiefly in that he inserted a row of buried catgut sutures between the base of the external flap and that of the separated mucous membrane, avoiding the sphincter and taking care not to penetrate into the rectum. These sutures occluded most of the vessels supplying the hæmorrhoidal region, lessening the trouble from hæmorrhage when the final ablation of the tumors was done. The pile-bearing portion was then cut away and the free margins of the severed mucous membrane and the skin were now sutured together. Lange speaks highly of the rapidity and completeness of the healing process and the comfort of the patient secured by his method of operating.

In 1888, and again in 1889, Marcy, of Boston, published papers claiming a long series of cases in which he had removed hæmorrhoids by excision with excellent results. His technique resembled that of Lange, differing chiefly in that he surrounded the separated pile-bearing membrane at its base by a line of deep, double continuous animal sutures applied after the manner of a shoemaker's stitch, with a needle pierced with an eye near its point. By drawing this line of sutures sufficiently close, but not close enough to produce necrosis of the enclosed parts, the blood vessels are occluded and there is no hæmorrhage when the membrane is cut away.

Weir, of New York, has also reported a series of cases in which he has followed the method of Whitehead in excising hæmorrhoids, and gives preference to it, in suitable cases, over other methods.

On the other hand, Kelsey, of New York, has severely criticised the operation of Whitehead, pronouncing it "naturally difficult, tedious and bloody," and claiming that the results obtainable by the clamp and cautery were equally good, and obtainable by an operative procedure more simple and ready in its execution.

From my own experience, I have nothing new to add to the technique of the operation; I have worked on the lines laid down by Whitehead; the various steps of the operation I have found to be comparatively easy of execution, but taking much more time than the enthusiastic representations of the Manchester surgeon would have led me to expect. Some of this prolongation of the operation is due of course to the natural inexpertness of one who is new to the operation; some is due to the aggravated character of the cases with which I have had to do. Most of the time is used in securing hæmostasis, and to have to apply a ligature to twelve or more arterioles in a case has been my usual experience. There has been no special trouble or difficulty about any part of the work, it has been simply time-consuming. I have not tried the deep sutures of Lange, nor the buried shoemaker's stitch of Marcy. I shall, I think, test them in future cases with a view to their value in controlling bleeding and shortening the time required for the operation.

The results, however, have been all that the most enthusiastic partisan of the operation could have claimed for it. A perfectly healthy outlet to the rectum, as far as the mucous membrane is concerned, has been secured to all my patients. The contractile power of the sphincters in the worst cases, long weakened by constant distension, has, of course, demanded time for its restoration. In only one case, at the end of a year, is there still some lack of power in the sphincteric grip to wholly control the escape of gas or fluids, but in this case the improvement in the general condition of the parts, and the resulting comfort, is so great that the slight infirmity that still persists is regarded as insignificant.

The certainty, the absoluteness and the perfection of the cure are the points which have struck me as most clearly demonstrated in the few cases which I report. The procedure is an ideal one surgically inasmuch as it combines immediate and radical removal of all diseased tissue, with immediate closure of the wound and subsequent union by first intention. I cannot think however, that it can be called an operation easy of performance—I should say that it was an operation not to be lightly undertaken by one not accustomed to delicate operative manipulations, or without the presence of good assistants, good light, and appropriate instruments. Doubtless, as in the hands of the eminent surgeon who has introduced the operation, natural manipulative

aptitude, extensive general surgical training and the special skill resulting from the repetition of the operation hundreds of times would reduce the difficulties of the operation to a minimum and render it neither tedious nor bloody. It is not, however, what the operation would be in the hands of such an operator that is to be considered, but rather what it would be found to be by the operator of average experience and opportunities. My judgment is that in the hands of the latter operator, the operation in aggravated and extensive piles would be found to often justify the opinion of Kelsey, already referred to, that it is "naturally difficult, tedious and bloody." It ought to be ranked as a major operation. Especially ought it to be ventured upon with caution in the case of patients who are very weak and unfit to be subjected to a prolonged operation, or in whom, by reason of renal or pulmonary disease, prolonged anæsthesia would be dangerous. The operation is one which appeals much more to the operative bent of the general surgeon than to that of the rectal specialist, and I am not surprised that by the latter class of practitioners it is almost universally condemned. To one, however, who is accustomed to dealing with vascular tissues, to whom the hæmostatic forceps and the ligature are ready and frequent servitors to whom the preservation of cut surfaces from septic contamination is a thing of easy routine, to whom the coaptation of cut surfaces, subsequent primary union, the avoidance of tissue necrosis and limitation of suppuration are always eagerly sought for, to such the technical difficulties inherent in the ablation of hæmorrhoidal tumors after the method of Whitehead will seem trivial obstacles beside the ideal perfection of the results to be gained. My judgment is that the operation is based on sound surgical principles, and that it is a valuable and permanent addition to operative surgery. The frequency with which it will be resorted to will depend much on the individual surgeon; it will be more frequently employed by surgeons who are doing much general operative work, and I think that I can see in its results qualities that will cause it to be more and more frequently resorted to, as multiplied experience brings to the operator increased skill.

Certain cautions, however, require to be noted before dismissing this subject. *First*, I can see how that an operator may readily so injure the sphincter that permanent fecal incontinence may result. It is by no means an easy thing to always recognize at once the muscular fibres of the sphincter in the first stage of the dissection. This will be the case more especially in the instances of aggravated disease, when the tumor is large and the sphincter flabby, and the additional preliminary stretching at the time of the operation has entirely relaxed it. Unless great care is taken to identify the structures exposed by the primary

incision, and to keep clearly to the inside of the muscle, the operator may find that he has included a part or the whole of it in the mass which he is enucleating; even though he may perceive his error before going very far, he may yet have divided important nerve fibres the section of which may entail permanent loss of power in the muscle. The first steps in the operation therefore, should be characterized by great care in the identification and avoidance of the sphincter; when the muscle has been clearly identified and drawn aside at a given point, the further enucleation may be done with expedition and without danger to it.

A second caution is to be observed from the side of the tumor. If care is not taken to hug closely the surface of the muscle, and thus to keep outside the vascular tissue of the tumor proper, the process of enucleation will be less readily and speedily accomplished, and will be attended with an unnecessary amount of venous hæmorrhage. When, however, the sound tissues beyond the tumor have once been reached at any point, the further enucleation may be readily and safely accomplished by pursuing the enucleation circularly around the bowel from this point, and working downward to the anal margin. It is important also that the dissection shall be pushed upwards well beyond the diseased portion at all points, so that the final transverse section of the bowel when the tumor is cut away shall be made through healthy mucous membrane. If this precaution is not taken, the difficulties in obtaining final hæmostasis will be much increased. No hesitation need be felt in advancing upwards with the dissection as far as may be necessary to find the healthy bowel, lest difficulty should be met with in bringing down the cut end of the bowel and suturing it to the skin. In the aggravated cases, now under consideration, there is always present much relaxation of the rectal walls above the tumor with tendency to prolapse, and considerable retrenchment of this relaxed membrane is of advantage to have coupled with the removal of the tumor proper in order to secure the most perfect result. On the other hand, none of the skin at the anal margin should be cut away however redundant it may seem to be at the time. When the suturing of the intestine to the skin has been completed the line of sutures will be at that time well outside the anus, but as time passes the rectal walls regain tonicity and retract upwards somewhat, the sphincters regain their power of contraction and close the anal orifice, drawing in the skin which has become adherent to the surface of the external muscle, until finally the suture line will be found to have disappeared within the anus, and a well marked integumentary funnel leading up to it will have been formed. In anticipation of this, therefore, no cutting away of integument should be done.

Another requisite for the most perfect result is that the retrenchment of the rectum shall be equal on all sides. In one of the earlier cases upon which I operated, after sufficient time had elapsed to bring about the definitive retraction and other changes described above, I found that upon one side the integument was not drawn up as far as on the other, but that on the contrary the mucous membrane here for a limited space remained drawn down below the margin of the sphincter, I had a veritable ectropion ani. This marred the perfection of the result. For a time, I was not able to explain the reason of this satisfactorily to myself, and naturally looked upon it as a result due in some way to the operation, or to some peculiarity of the patient. I have since learned that it was due to neither, but rather to a fault in the way this particular operation was done. In cutting away the diseased tissue, although I had gone through healthy tissue in every incision, I had nevertheless followed closely the line of demarcation between it and the diseased tissue, and inasmuch as the extent of the membrane involved in the disease had not been alike at all parts, I had cut away less on one side than on the other. Hence the lack of balance of the two sides, the unilateral superabundance of the mucous membrane, the ectropion. In one other case, operated before my attention had been awakened to this possible defect, I found a similar lack of balance to exist when my suturing was completed. I saw then at once the difficulty, and, without ado, proceeded to cut my sutures, and remove more of the mucous membrane where it was too abundant. The final result was perfect.

RECAPITULATION.

1. In the more aggravated forms of hæmorrhoidal disease the surgeon has to do with a veritable angioma, sometimes involving the whole circumference of the anal end of the rectum.

2. The anatomical relations of this vascular tumor are such as to render possible its enucleation and ablation without special hazard to life, and without involving especially difficult operative procedures. This has been demonstrated on a large scale by Mr. Whitehead, of Manchester, England, and is corroborated by the experience of many other surgeons.

3. The method of excision and suture is inherently a more desirable operation than other methods involving strangulation of tissue, ulcerative and suppurative processes. It is not, however, so easy or so quick of performance, and demands a greater degree of technical skill and experience for its safe employment.

4. The best final results from the operation can only be obtained by avoiding injury to the sphincter muscle, or to its nerves; by the preservation of all the integument at the verge of the anus, and by the

even circular dissection of the rectal mucous membrane above the growth.

CONCLUSION.

The operation of excision though, in the more aggravated cases of hæmorrhoidal tumors, often tedious and bloody, presents no difficulties not under the easy control of ordinary surgical skill; its results are superior to those obtainable by any other means; it is therefore an operation to be commended, and to be accepted as a permanent addition to the art of surgery.

DISCUSSION.

Dr. WIGHT.—Mr President, I have been very pleasantly impressed by the Doctor's able, and I could almost say, exhaustive paper. While I do not rise to criticise, for I am not competent to do that, and while I do not reject his principles, for I think that would be as incompetent for me to do as the other, at the same time I may be permitted to add something, not to this individual and particular operation, but to the treatment of cases just like these. To be brief as possible, first let me say that I believe there is a method of treatment which may not be quite so good, but which I think is nearly as good, as the one Dr. Pilcher has advocated. It is good enough, so far as I can see, in bringing about such results as are desired. With your permission, I will state the essential facts of my operation. Among the first cases I have treated, I operated upon some years ago a lady 76 years of age, who had suffered from this condition for over forty years, and I do not think I exaggerate when I say that the protrusion was fully as large or larger than any which Dr. Pilcher has presented. Not only was there this condition, but there were painful lacerations upon various parts of this protruded surface, and the patient was losing ground day by day, and week by week, and had been doing so for a long time; and as a last resort, I saw her with her family physician and advised an operation. Excision was out of the question under the circumstances, for the patient was in an exceedingly feeble condition, so I advised an operation which I am in the habit of doing, namely, ligation, as I believe in the proper application of the ligature we have the means to destroy the diseased part and control the hæmorrhage. The Doctor gave the anæsthetic and the daughter of my patient assisted me in the ligation. I put on a row of ligatures around the most external part of the protrusion down to the cutaneous surface. Then I pulled the whole structure down and put on another row of ligatures above, and when I had finished I had on thirty-four ligatures. That case was one of the worst I have ever seen or operated upon, and the result could not have been any more desirable. The ligatures came away in a few

days, the pain was relieved, health and comfort were restored, and the patient is still living and is over 80 years of age. She very soon recovered her health and has not been in any trouble since.

While I do not condemn Dr. Pilcher's operation, it seems to me I ought not to approve it in a positive way. I am not going to condemn it or reject it, but on the other hand, I am not going to abandon a satisfactory method which I have employed for many years—the use of the ligature.

REPORT OF CASES OF HYDROCELE FOLLOWING OPERATIONS FOR RADICAL CURE OF VARICOCELE, STRICTURE OF URETHRA AND RECTAL POLYPUS.

BY H. W. RAND, M.D.,

Read before the Brooklyn Surgical Society, March 20, 1890.

I have for sometime been much pleased with the results obtained by subcutaneous ligation of varicocele after the method described and advocated by Prof. Keyes. Of the entire number of cases upon which I have operated in this way, I have, unfortunately, kept no record, but can recall eleven. In nine of these no unpleasant result whatever was noted. In none has atrophy of the testicle increased after operation. In all atrophy was apparent, and in some cases marked, prior to operation. In several there was permanent increase in the size of the testicle. In two cases, however, hydrocele has followed and been apparently the direct result of the arrest of circulation through the veins.

As none of the authors who favor this operation speak of any such sequel, I deem these cases of sufficient interest to report.

CASE I. The first was a patient who had, a few months before, recovered from a sharp attack of gonorrhœa and was under treatment for a stricture of large calibre located in the deep urethra. He had an enormous varicocele of several years standing, with marked atrophy of the testicle. The enlarged veins were tied with a single silk ligature. No pain whatever was complained of after the operation, and there was only a moderate amount of swelling. The case progressed as usual for the first two weeks, the patient being up and around after the sixth day, wearing a suspensory bandage. During the third week the scrotum was noticed to increase in size, but with absolutely no pain. Three weeks after the operation it became evident that fluid was present in the tunica vaginalis. The swelling continuing to increase, a

few days later two ounces and a half of clear, yellowish fluid were withdrawn. Aspiration was repeated in five, and again in ten days, the same amount of clear fluid being withdrawn each time. At the latter operation it was noted that the ligated veins were very perceptibly smaller. There had been no inflammation of the epididymis or testicle. In short, in every respect, other than in the presence of hydrocele, the case had progressed in the usually favorable way.

After the last aspiration this patient went to the country, and I have been unable to see him since. I understand, however, that there has been no necessity for further tapping, and that the case has been steadily improving.

CASE II. was a vigorous, healthy man of twenty-four, who had never been the subject of any local disease other than a moderate sized varicocele, which had not, however, given him any trouble. Being debarred from entering civil service on account of his varicocele, he came to me for operation. In this case, also, absolutely no pain and but little swelling followed the application of the ligature. The patient was allowed to get up after the fourth day. For two weeks after operation there was, to the patient, no perceptible change in the size of the scrotum. At the end of that time, however, he thought something was wrong, and reported to me. The testicle felt a little larger than prior to operation, but was not painful or unduly sensitive. There was apparently some fluid in the tunica vaginalis. Hoping that absorption would take place, an evaporating lotion was applied, the part kept well suspended, and the patient given a saline cathartic each morning. The swelling, however, continuing to increase and beginning to give the patient some annoyance while at his work, it was aspirated, and two ounces of clear, faintly yellow fluid withdrawn. This was one month after operation. During the following six weeks aspiration was repeated nine times, the quantity evacuated at each sitting varying from a half ounce to an ounce and a half, and the fluid maintaining the same character. These repeated aspirations were resorted to with the hope of hastening a cure. It is now three weeks since the last aspiration. The sac has refilled, but has not seemed to grow larger during the last two weeks.

That these hydroceles were not caused by the slight traumatism inflicted by the operation itself, would seem proven by the fact that effusion was not apparent for many days afterwards. That they were in some way the result of the operation and not accidental, seems equally evident from the fact that they occurred within three weeks after the ligatures were applied, and without the history of such disease prior to operation or of any injury subsequent thereto. I can see no reason why hydrocele followed the operation in these cases except that

it originated in a passive congestion of the testicles and the visceral portion of the tunica vaginalis, due to the fact that the supply of blood was greater than the undilated and unligated veins could return to the circulation.

In conclusion I should like to present the following question to the Society for consideration. In such cases as these, provided recovery from the hydrocele did not take place after repeated aspiration, would it be justifiable to attempt to bring about radical cure by injection of carbolic acid? I suggest only the latter mode of treatment, because where injection is not contraindicated by the pathological conditions present, I believe it to be preferable to incision. Does the altered circulation following ligation of the varicocele contraindicate injection?

CASE III.—Retention of Urine from Spasmodic Stricture of the Urethra apparently relieved by Cocaine Anæsthesia.

This patient was referred to me by Dr. H. A. Tucker, Jr. He was twenty-three years of age, and gave no history of venereal disease, but had formerly practised self-abuse. Four months previous to this attack he had suffered from retention of urine, and was relieved by the passage of a small catheter. This instrument, he stated, had, however, been passed with difficulty and had caused much pain and rather free bleeding. Retention had now lasted ten hours, and the patient was suffering greatly. The doctor had endeavored to pass a soft catheter, but without success. After an injection of cocaine an attempt was made to pass a full-sized instrument, but it was arrested at a depth of five inches. No catheter of any description could be passed beyond this point. The history of the case clearly showed the existence of a spasmodic stricture, but the impossibility of catheterizing the patient suggested the presence also of either an organic stricture or a false passage, or of both. I now determined to more thoroughly anæsthetize the urethra with cocaine, and pass a whalebone guide, over which I could perhaps conduct a tunneled catheter into the bladder. Injecting about half a dram of a four-per-cent. solution, I endeavored gently to force some of it through the stricture by external manipulation, and while so employed, in less than five minutes after this second application of cocaine, the patient voluntarily emptied his bladder.

A few days later I explored this patient's urethra, and found an organic stricture four inches from the meatus, with a calibre of No. 18 F., the normal calibre of his urethra being 33 F.

But, without detaining you with any further history of this case, the point to which I would draw your attention as one of some interest was the apparent effect of cocaine in relieving the spasmodic element, and thus enabling the patient to voluntarily empty his blad-

der. I have often been struck with the freedom from urethral spasm while passing a catheter, or during exploration with the bougie à boule when cocaine has been thoroughly applied; but it has never before occurred to me that this agent might also be valuable in spasmodic stricture whether or not associated with an organic one. I have seen no mention made of its use for this purpose, and would suggest that it be given a fair trial before resorting to the ordinary methods of treatment; for, if further experience demonstrates its effectiveness in such cases as this, that is, where retention is due only or chiefly to the spasmodic element present, it will possess advantages enjoyed by no other agent.

Since writing the above I have learned from Dr. Tucker that he gave the patient one-fourth grain of morphia and $\frac{1}{240}$ atropia before he came to my office. It might be argued that the result was due to the anodyne and not to the cocaine. Such, however, I do not believe to be the case, for the patient's sufferings constantly increased up to the time that he urinated, no anodyne effect whatever having been experienced; and I have never yet seen a case of retention relieved by opiates until the dose was sufficient to notably quiet the pain and spasm; then, and not till then, will the patient sometimes void his urine.

CASE IV.—Stricture of the Urethra presenting some interesting features.

C. S., aged forty-five, had suffered from stricture for eighteen years. During that time he had occasionally consulted a physician, but had in the main taken care of his own case by the frequent introduction of a small bougie. When admitted to the Long Island College Hospital he was passing a very small stream of urine at short intervals, a portion of the urine at the same time finding its way through a perineal fistula, which had existed for over three months. His urethra for the first four inches was practically one long stricture admitting 16 F. Here and there distinct bands could be demonstrated, but no uncontracted urethra lying between them. In the deep urethra was a tight stricture admitting only a whalebone guide.

The strictured portion of the pendulous urethra was divided through its entire length by dilating urethrotomy. The deep stricture was freely divided by an external perineal urethrotomy. The prostatic urethra was found to be three inches in length, due largely to median hypertrophy. The bladder was drained for the first three days, when the catheter was withdrawn. The highest temperature after the operation was $101^{\frac{2}{5}}\text{°}$, and it fell to normal within twenty-four hours. Urine ceased to flow through the perineal opening on the ninth day, and by the eleventh day the wound was completely closed.

Two weeks after operation the patient began to complain of pain along the urethra, most marked just beneath the glans. This was associated with frequent urination and marked vesical tenesmus. The urine did not indicate any inflammation of the bladder. Examination per rectum gave no clue as to the cause of his symptoms, which so closely resembled those of a patient suffering from a so-called "fit of stone," that I again explored his bladder with a searcher, although it had been carefully examined at the time of operation. Nothing was found. The pain at times was so severe as to necessitate the use of an opiate. The bowels had been thoroughly evacuated daily, so far as could be ascertained from the patient and his attendants, since the third day after operation. About ten days after the beginning of these symptoms the diagnosis was suddenly cleared up, and the patient as suddenly and permanently relieved, by the expulsion from the rectum of a number of large and very hard scybalous masses. These must have lain high up in the rectum beyond the reach of the finger, for they had not been detected, although repeated digital examinations had been made.

The points of interest in this case are, first: The amount of hypertrophy of the prostate in a man of only forty-five, appreciable hypertrophy being rare under the age of fifty. This condition had probably been hastened by the long existence of an improperly-treated series of strictures. It will be interesting to note if this enlargement materially subsides now that the urethra has been restored to something near its original calibre. Second: The group of symptoms produced by the presence of scybala, so closely resembled those indicative of vesical calculus that it was to me an entirely new experience. Probably every member of this Society has met with cases of vesical irritability from fæcal retention, where the cause could be readily ascertained and removed, but the symptoms in this case were quite typical of calculus and were persistent, although the bowels were apparently evacuated daily, and the cause was obscure until relief was obtained.

CASE V.—Rectal Polypus.

This patient, whom I saw with Dr. E. F. Pearce, was a male, seventy years of age. He had suffered from internal hæmorrhoids for over twenty years; and for ten years or more at every evacuation of the bowels a tumor would protrude with the hæmorrhoidal mass. These were reduced with increasing difficulty, until his sufferings became so intense that he consented to operative interference.

Upon examination, after he had voluntarily expelled the entire mass from the rectum, I found this tumor which I show you. Its length was about two inches and its greatest circumference four and a quarter inches. The veins of the entire pile-bearing

region were dilated, forming a large mass around the anus. It was to this mass and well within the external sphincter, when the whole was reduced, that the polypus was attached. Its pedicle was short and about three-fourths of inch in diameter. There were no distinct hæmorrhoids. Within the rectum was a large and irritable ulcer, which had been caused by the presence of the polypus. The patient also had an enlarged prostate, a dilated bladder, and chronic cystitis. So far as the hæmorrhoidal mass was concerned, only Whitehead's operation could have promised relief, and the patient's general condition contraindicated such extensive interference as this would entail. It was, therefore, deemed best to remove the polypus alone, and forcibly stretch the sphincter ani. It is now about two weeks since the operation, and the patient's condition is steadily improving.

I present this case as being comparatively rare, both as to the character and size of the polypus. It is of the so called fibrous variety, and, according to Allingham, is not often met with even by surgeons of large experience. He has only seen a few such in several thousand cases of rectal disease, and they have been smaller than an English walnut.

Dr. Joshua M. Van Cott, Jr., who kindly examined this growth for me, reports it to be a fibro-myoma, rather than of the purely fibrous variety.

DISCUSSION.

Dr. FOWLER.—I cannot recall any similar instances of hydrocele following varicocele. It would seem as if the explanation of Dr. Rand, that it was due to the occurrence of some circulatory disturbances, and retarded exit of venous blood from the region, would account for it more satisfactorily than any other. Certainly, in the absence of any better explanation, I should be inclined to adopt this one. I have operated by both Lister's method and Keyes' method a number of times. It has not been my fortune to have such a sequel as this, and I do not know just what the literature of the subject is.

Dr. RAND.—I find no mention made of any such complication or sequel.

Dr. FOWLER.—I have never known it to occur, and I know of no cases reported of such peculiar conditions following varicocele. If the pathology of hydrocele were understood, it might throw some light upon these cases.

Dr. PILCHER.—The only case that has come under my observation which might resemble these of Dr. Rand's is one in which I operated for the radical cure of hernia, the case being one of the congenital variety, in which that portion of the sac that was cut off and left behind

it, as an envelope for the testis, became the subject shortly afterward of a hydrocele. The disturbances in the circulation, incident to the operative procedures, were somewhat similar, I should suppose, to that which is produced by the ligation of the veins for varicocele. There was quite a rapid development of the hydrocele, and in the course of the case there was considerable inflammatory reaction, with suppuration of the sac, which all subsided, and the patient was cured upon the incision of the sac.

Have you had any experience in the excision of a portion of the vein?

Dr. RAND.—In one case, and I think this so much simpler that it is the preferable method, except, perhaps, in exceptionally large varicoceles.

Dr. PILCHER.—You feel secure in it?

Dr. RAND.—Reasonably so. The point upon which I would like to have the gentlemen present express an opinion is the advisability of resorting to any treatment for a radical cure of a hydrocele following such an operation. One of these cases has not yet recovered, and it is some three months since the ligature was applied.

Dr. FOWLER.—The propriety of attempting the radical cure, it seems to me, would be evident. As to the method of cure, there is room for wide difference of opinion. The doctor mentioned the injection of carbolic acid, injection of tincture of iodine, and other methods of radical cure. One case was mentioned in which tapping was done frequently. It is the common experience, in ordinary hydrocele, that a certain proportion of cases, after severalappings, do not recur, just as in the case which the doctor mentioned. My judgment would be that these cases should be treated just as any case of hydrocele, and the individual surgeon's preference for special methods of radical cure would of course guide him in the treatment.

The injecting of carbolic acid I have used in ordinary hydrocele. I have injected, at a clinic, and allowed the patient to walk home, reporting again at the next clinic day. I remember one case in which a patient was treated by carbolic-acid injection for hydrocele. On the third day thereafter he attended the Grant funeral, and marched the whole length of Broadway, and with no evil results. I should not advise this course, however.

My preference, however, is for the method of complete incision, after Volkmann, and obliteration thereby of the cavity of the tunica vaginalis testis. Recently I have found it convenient to omit suturing, and simply pack the incision with gauze. This operation I have also done in the clinic, and have had patients walk away after dressing the parts. In a number of instances no anæsthetic was used. A curved

bistoury was passed into the cavity of the tunica vaginalis, and with one sweep the entire length of the cavity is laid open. An injection of cocaine, where it is expected to do this, will make it an almost painless operative procedure, occupying but a short time.

Dr. RAND.—In your judgment the altered condition of the circulation in the testicle and cord, resulting from ligation of the veins, would not necessarily prohibit treatment by injection or by any other method. My question was especially in reference to the advisability of treatment by injection; previous ligation of the varicocele would certainly not contra-indicate treatment by incision.

Dr. FOWLER.—I think not. I can see no reason why the same measures of treatment might not be applied in hydrocele arising from the conditions you have described and the ordinary hydrocele of everyday practice.

Dr. PILCHER.—I should think it might possibly be well for the surgeon to take into consideration this fact, which, perhaps, animates the doctor in submitting the question, namely, that the vascular conditions which determine the development of hydrocele are probably temporary, and that in the course of a few months, at farthest, the restoration of the circulation in the parts, the veins leading from which had been occluded by the operation, would be attained, and that all that would be required up to that time would be palliative measures. If that was the case, I should think it would be well to use palliative treatment for the first six months or more, and if, at the end of that time, there was persistence of trouble, then submit it to whatever method of radical cure might be chosen, for by that time definite and permanent circulatory conditions might be presumed to have been brought about.



NOTES ON THE COURTS AND DOCTORS.

BY SIDNEY V. LOWELL.

The Court of Appeals of this State has recently decided the case of Freeman Murray, as administrator of John Blanchard, against Luke Usher, &c. This was an action to recover damages for alleged negligence causing the death of John Blanchard, who was a day-laborer in a saw-mill, on the upper Hudson, operated by the defendants. His death was caused through the fall of a defective platform at the mill. Usher & Watkins, the millers, cared for their operative from the time of the accident until his death, employed a physician and paid his

funeral expenses. They endeavored to show all this on the trial in mitigation of damages, but the trial Court excluded the testimony. This ruling has been affirmed on appeal by the Court of Appeals. That Court of last resort, also went further and decided that the Act of 1847, under which only can a recovery be had for negligence causing death, did not allow recovery for the expense of the medical treatment of a person whose death had been so caused by another's negligence. This would seem unfortunate. The decision was not altogether expected. Under the common law, if a person sustained an injury through the fault of another, if he lived he could sustain an action against the wrong-doer. If he died, however, his cause of action died with him. To remedy this state of things the Act of 1847 was passed, allowing a recovery in such a case, but limiting the judgment to \$5,000; the suit to be brought by the administrator of the deceased. It would seem as if the law should, as an element of damage, allow a recovery for a medical attendance, that being the very first thing called for and necessary after every physical injury. Now that the law is settled that no recovery can be had under the existing statute, the latter should be made to fit the public need. The foot should not be shaped to the shoe, but the shoe to the foot.

EPILEPSY AND DEPRESSED SKULL. HÆMORRHAGIC PACHYMENINGITIS AND CONCUSSION.

BY GILMAN OSGOOD, M. D.

Cases presented at meeting of Brooklyn Pathological Society, January 16, 1890.

CASE No. 1.—A boy, 14 years of age. Previous history imperfect, but as far as could be ascertained is as follows: No neurotic history. When about 18 months old he fell from a two-story window and received some severe injury to his head. Was very sick for several weeks, but at last recovered. An operation was advised by his attending physicians, but his parents refused to have it performed.

For about four years previous to September 20th, 1889, was in an orphan asylum, and was removed from that institution on account of his having epileptic convulsions, and at this time first came under my observation, with a history of epilepsy of about four years' duration. He appeared to be in very good physical health, excepting that he had partial hemiplegia on the left side, and had a marked depression of skull in temporo-occipital region.

This depression was triangular in shape, with its base looking forward. It was one-half inch in depth, and a line drawn from the external angular process of the frontal bone on left side to the tip of the mastoid process of the right temporal bone, passed through the centre of the depression.

The base of the triangle was one-half inch posterior to and parallel with a line drawn from one external auditory meatus to the other. The lower side of the triangle corresponded with a line drawn from the external occipital protuberance to the upper margin of the orbit. The sides of the triangle were from an inch and a fourth to an inch and a half in length. Since coming under my observation he averaged about one fit in three days, a few occurring at night. Just before a seizure he would use profane language, and after the convulsive stage would seize anything he could lay his hands on and throw at those about him. Otherwise, there was nothing in his epileptic seizures worthy of notice.

Patient was seen by Drs. Barber, Shaw and others. It appeared to be a case where an operation was justifiable, and full consent having been obtained, the operation was performed by Dr. I. H. Barber, December 12th, 1889. There were present Drs. Schenck, Browning, Wells, Arnold, Macomber, C. Barber and house staff.

Dr. Barber is present and will describe the details of the operation, and I will simply say we opened what appeared to be a large cyst in right hemisphere. A drainage-tube was inserted, and the wound was dressed with iodoform and bichloride gauze. The wound repaired without the formation of pus. Within 48 hours after the operation patient had three fits, but subsequently had none.

The wound was dressed daily, and the cavity irrigated with warm water. The discharge was quite profuse and was always clear and of a serous nature.

On the day after the operation his temperature was $100\frac{3}{8}^{\circ}$, which was the greatest elevation attained, excepting on the fifth day, when it reached $101\frac{2}{8}^{\circ}$.

For the first three days after the operation he was very stupid and slept most of the time. His appetite was very good, and the only thing he complained of was a frontal headache.

On the eleventh and twelfth days after the operation, he removed dressings, saying there was an itching sensation about the wound. On the thirteenth day it did not drain freely. There was a rigidity of all the muscles; he did not appear to feel the prick of a pin, and was speechless, which condition, however, was soon recovered from after the removal of dressings and the discharge of about an half ounce of serous fluid.

On the fourteenth day he became comatose, could not be roused, and died the following morning.

A post mortem examination was made, Dr. Shaw was present and will demonstrate the pathological condition.

CASE NO. 2 —Is that of a man 45 years of age, who had for a long time been an excessive drinker, and had chronic diffuse nephritis. While intoxicated, he sustained fractures of two ribs, two scalp wounds, and several wounds and bruises about the face. Cause of injuries unknown, but he is supposed to have been kicked.

He came under observation about six or eight hours after receiving injuries, and there was then no evidence of concussion of the brain. He developed pneumonia, and died four days later.

I now present the brain, which reveals numerous small hæmorrhages in the meshes of the pia mater and dura mater of right hemisphere, and a cloudiness of the pia mater, especially marked in its anterior portion. There was also a thickening of and formation of a false membrane on the dura mater.

The pathological conditions then are an old pachymeningitis and slight concussion of brain.

TWO CASES OF COMPOUND DEPRESSED FRACTURE OF THE SKULL.

BY EZRA H. WILSON, M. D.

Read before the Brooklyn Pathological Society, February 13th, 1890.

Frederick Fris, 38, Bavarian, driver; admitted per ambulance, November 11th, 1889. Service of Dr. Valentine.

On the morning of November 11th, he had fallen from his wagon, and was brought to the hospital by the E. D. ambulance.

On admission there was found an extensive compound depressed fracture in the left temporal region. The patient was somewhat comatose but could be roused sufficiently to answer questions in monosyllables. He was operated upon by Dr. Valentine a short time after his admission. The wound was enlarged by radiating incisions; there were three fragments depressed; by means of the elevator and separation forceps these were removed without the aid of the trephine. The hemorrhage was considerable, and several small vessels were ligated before the wound was dry. All antiseptic precautions were observed, and with good results in so far as the kindly healing of the wound was concerned.

After the operation the patient progressed favorably for some time. He had no rises of temperature, and received no medication other than 10 grain doses of bromide of potash three times a day.

The wound healed, and the patient was up and about the ward, with no cerebral symptoms. On the 20th (eight days after the operation), he became sleepless and restless at night, and was given 30 grain doses of sulphonal with but little benefit. Was then given morphine gr. $\frac{1}{4}$ with bromide of potash; this gave him sleep for some time, but soon lost its effect. The patient now became noisy and irritable. On the 26th it became necessary to use hypodermics of hyoscyamin, which appeared to be the only thing which would quiet him. He had to be constantly watched by a special nurse, and was much worse at night. After a few days it became difficult to induce him to swallow anything, and on the 30th he was nourished per rectum. He gradually grew weaker, and died on the 4th of December. His temperature remained nearly normal throughout, sometimes reaching $99\frac{1}{2}^{\circ}$. He had no paralysis, no convulsions, but was wildly delirious.

AUTOPSY.

Dec. 5th, made by house staff.

Body.—Fairly nourished, rigor mortis present.

Head.—Wound in left temporal region, healed. A portion of the left temporal bone was absent, being removed at a previous operation. There was a fracture extending from the squamo-parietal suture downward, across the opening left by the operator, along the petrous portion into the middle lacerated foramen. The scalp and the dura were firmly adherent over the opening, and the dura was adherent to the brain on the inner side opposite the wound. There was a small abscess about one inch by one inch in the gray matter in immediate contact with the wound, this abscess extended through the gray matter into the white matter, and was filled with brain detritus and pus. The pia mater over the convexity was somewhat thickened and there was some exudation serum under the pia.

Thorax.—Left pleural cavity obliterated by adhesions. Lungs and heart normal.

Abdomen.—All organs normal except the kidneys. The right kidney contained a cyst in the upper end, size of a hickory-nut; appears normal otherwise.

The autopsy being made in my absence, I was very much disappointed in not securing more accurate notes on the exact locality of this abscess. It is remarkable that the man did not show any pressure symptoms, his speech was not interfered with, he had no chill, and no marked rise of temperature to indicate the formation of an abscess. I am at a loss to determine the exact way in which he died.

W. A. S., 44, English, shipping-clerk; admitted by ambulance Nov. 26.

Suffering from an extensive compound depressed fracture of the skull, crescentic in form, about three inches in length by one inch in width at its broadest point. The fracture was located in the left parietal region extending downward and backward almost to the occipital protuberance. Patient comatose. Dr. Valentine operated upon him very soon after his arrival. The wound was enlarged, the fragments elevated without the use of the trephine. The depressed portion was in two pieces; on removing the second portion, which was loose from the pericranium, a profuse hæmorrhage took place, which was controlled by packing with sponge. Strict antisepsis was observed; the wound was closed with silk, and a few strands of catgut were left as drains. The wound was dressed every second day, and healed kindly.

The patient's general condition was not good, he was quite weak, and took but little nourishment the first ten days; after this he began to improve.

Dec. 9th. Half the stitches removed. Scalp sunk into the opening in the skull slightly.

11th. Remaining stitches removed. Wound entirely healed, except a small point left for drainage.

13th. Only a small stain on the gauze dressing.

On the third day after the operation, the patient regained consciousness, and although somewhat dull at first, remained rational throughout.

Dec. 14. Patient sat up in a chair for a while, walked about the room, and felt well except a slight pain in the right side of the head, which had bothered him more or less since the accident.

Progressed favorably and was discharged, cured, on the 23d.

THE DWELLINGS OF THE LABORING CLASSES IN THEIR RELATION TO INFANT MORTALITY.

BY ALFRED T. WHITE, BROOKLYN.

Read before the American Public Health Association at its Brooklyn Meeting, 1889.

The poorly-constructed and badly-arranged houses, which too frequently have to form the homes of the working classes, have been long recognized as among the prominent causes of excessive mortality, and especially of infant mortality, in many large cities here and abroad. Although the worst conditions of this sort exist to-day in this country in only a few of the larger cities, symptoms of them begin to appear in many smaller places. It must be remembered that scarcely fifty

years ago there had not been a regular tenement house built in New York City. Another fifty years may as radically change the conditions of scores of other cities, if their inhabitants and their officials are not wise in time. These conditions of life affect not only the health, but the minds and morals of the people who are obliged to accept them, and are a source of danger outside of the walls of such buildings as well as inside of them.

Much has been accomplished already in New York, in Brooklyn and in other cities in the way of controlling the plans of new buildings and the alteration of old buildings, and this has no doubt contributed among other causes to reduce the average death-rates of such cities. But to find the most conspicuous illustration of what can be done in this direction to improve health and lengthen life, we must cross the ocean and take a look at London. In that enormous and still rapidly-growing metropolis, sewerage arrangements have long been most difficult, and the water supply would here be reckoned very scanty indeed. But time and money have been freely expended in investigating conditions and possibilities, and when it was found where money was needed to be spent, it has been expended in heroic measure, and as one result, step by step, the death-rate has been reduced to figures which even twenty years ago would have been deemed impossible of attainment. To compare the 18.50 death-rate of London in 1888 with the 26.18 of New York, the 23.23 of Boston, the 22.72 of Brooklyn or even the 20.72 of Philadelphia, is to suggest to all these cities that there is abundant room for them and for others to advance the conditions which assist to maintain health and lengthen life. And yet at no time has London caught up with its best possibilities and much less have our American cities approached theirs.

It was about the time when the first tenement house was built in New York (1838) that in London a few people began to struggle with the problem of the better housing of the poor. Since then many individuals and societies have invested millions of pounds sterling in erecting buildings intended to furnish the best accommodations within the rent-paying power of the working classes. Among these efforts, it seems to me, the first place unquestionably belongs, equally by its plans, its management, its magnitude and its results, to the Improved Industrial Dwellings Company, of which Sir Sydney H. Waterlow is chairman. This company has now invested over one million pounds sterling and has, or soon will have, accommodations for 5,300 families in its London buildings. Their plans afford an abundance of direct light and air to every room in the buildings, and furnish all necessary sanitary conveniences separately to every tenant. Their buildings are moreover distinguished by the exterior staircase, usually sunk into the

front of the building, though sometimes in the rear, and open to the air, so that there is no common interior shaft, staircase or hall, and no interior communication whatever from floor to floor.

Almost all of these dwellings are let to families with children, and the percentage of children to total population must be higher within these buildings than in the metropolis at large. Because of this and of the greater birth-rate we should expect a higher death-rate in these buildings than the average of London, but the official returns of the Registrar-General prove the contrary. I quote years for which I have reports at hand.

	<i>Death-rate of the Metropolis.</i>	<i>Buildings of the I. I. D. Co.</i>
1875.....	23.7	15.2
1876.....	22.3	16.5
1877.....	23.5	17.2
1883.....	20.4	15.5
1884 to June 30, 1886.....	20.3	14.3

Note that while the death-rate of all London has steadily diminished, these improved dwellings keep their distance in advance all the time.

Attracted by these figures, I wrote Mr. James Moore, the secretary of the company, asking for some details regarding infant mortality, and quote from his reply.

"I have had the returns of births and deaths for last year abstracted, with the following results:

"No. of deaths under 1 year, 88; or 4 per 1,000 of population.

" " from 1 to 5 years, 49; or 2.2 per 1,000 of population.

"This is for the year to the 30th of June last, during which our total death-rate was only 11.2 per 1,000, the birth-rate being 35 per 1,000."

The buildings erected in London by the Peabody Trust Fund are built on models more closely like old style houses, but with abundant light and air. Their tenants, about 20,000 in number, average somewhat less in weekly earnings than those of the I. I. D. Co. In the buildings erected by the trustees of this fund, the average annual death-rate in recent years is 0.96 per 1,000 below that of all London. This would be considered a very large percentage in the saving of life, were it not contrasted with the saving of 6.3 per 1,000 in the buildings of the I. I. D. Co. I cannot but regard the greater saving of these latter as due to the superior plans of construction, and especially to the outside staircase system. In the reports of the Peabody Fund some interesting ratios of infant births to infant deaths are given, which I quote.

<i>Ratio of Infant Deaths to 1,000 Births in all London.</i>	<i>Peabody Buildings.</i>
1882.....	151.00
1884.....	152.00
1885.....	147.87
1886.....	158.78
1887.....	157.92
1888.....	146.44
	137.41
	138.69
	138.67
	149.48
	140.66
	126.87

An average annual saving of 13.77 in the ratio of infant deaths to births.

Reckoned per 1,000 of population *of all ages*, the death-rate of infants under one year shows a slight excess over the same ratio in all London, in all these buildings, but reckoned per 1,000 *of infants living* it is decidedly lower than the outside average. The unusual proportion of young children in improved dwellings is, of course, balanced by a lower adult proportion. Hence, while we find an infant death-rate nominally a trifle above that of all London, we find a death-rate for those above one year old scarcely one-half of the average for the whole metropolis. It is unfortunate that we cannot compare the deaths under one year, under five years, and above five years, with the number of living *of same ages*. Such a comparison would, in my judgment, show that of the lives saved annually to the occupants of these improved dwellings, half, or more than half, were saved under five years of age.

Those interested to see buildings constructed as closely to these best London models as differences of climate, building materials and tenants' wants allow, can find them here in Brooklyn in the Tower Buildings at the corner of Hicks and Baltic streets, where accommodations for 1,000 to 1,100 people have been in use since 1878, or can see similar buildings in course of erection at the foot of Joralemon Street. The tenants of the Hicks Street buildings are usually perfectly willing to show their apartments to visitors, if the hour be convenient.

A record of deaths in these Brooklyn buildings has been kept by the agent, but it is quite possible that deaths occur without his being advised or hearing of them, and a population of 1,060 is moreover too small to furnish reliable averages. It was my intention to make a close comparison of the ratio of children dying to children living, in these blocks and in all the neighboring blocks of old style tenement houses; but it has been practically impossible to obtain figures of the population of these other houses, as there has been no census here since 1880, and those returns are seemingly inaccessible in Washington, and the Health officers here felt themselves powerless to secure the information desired.

In the city of Brooklyn at large, the annual deaths of children under five appear to average 9 to 10 in the hundred of those living within same

ages, while in these improved buildings it is between 6 and 7, according to the agent's figures. In old style tenements, of about the same size in New York, the Board of Health figures show a corresponding rate of 11.4.

It appears from the death records in these Brooklyn buildings that there is no instance in which a contagious disease has been communicated to apartments adjoining, or above or below. These diseases, of course, enter there, as into the best-guarded private houses, but the outside staircase has so far provided all necessary isolation; while in ordinary houses used by several families, the stairway hall is as natural a vehicle for the communication of disease as for that of sound, smells or flames.

Cholera infantum, that product of summer heat, may be lessened in these buildings in so far as abundance of air, as fresh as it is to be had in the city, is furnished by through ventilation from front to rear in every apartment. But fresh air is not to be had in the city after days of high temperature, and the effects of the hot weather on infants is even greater than the statistics of deaths show. For these ratios are made upon the basis of winter population, while in our largest cities thousands of little children, whose parents are well-to-do, spend every summer out of town. Here in Brooklyn the Children's Aid Society has provided for poor children a Seaside Home at Coney Island, and near by it is a similar Home of the New York Society. In these Homes children are kept a week or longer, and it is the belief of those in charge of the Brooklyn Home that any cases of simple diarrhœa sent there can be cured in the sea air, even if life might not have been prolonged in the city more than a very few days. Here it would be interesting to follow these cases back to their homes in the city and see whether the primary good results are maintained permanently.

In every direction there is need of more accurate statistics concerning present conditions and the results of experiments in remedies. It seems to me that in every large city an account should be kept with each street, each block, each house. Its population needs to be accurately known, and it might be charged, as in a ledger account, with its deaths. Such figures may seem dry to thousands of people who ought to be interested, but they mark the distance advanced and point the forward road.

The death-rate of all our cities ought to be reduced five in the thousand from present figures, and at no distant day. In a city the size of Brooklyn that would mean four thousand lives saved annually. Among the directions in which this saving will be made those that pertain to the dwellings of the people and the care of little children seem to me likely to be among the most prominent.

A CASE OF OVARIAN CYSTOMA WITH TWISTED PEDICLE. —OPERATION: RECOVERY.

BY GEORGE R. FOWLER, M.D.,

Surgeon to St. Mary's Hospital and the Methodist Episcopal Hospital.

Mrs. J., aged thirty-five, colored, was brought to the M. E. Hospital with the following history: She had always supposed herself to be in perfect health; menstruation normal; married eight years ago; no children. Seven years ago, while three months pregnant, she fell from a step-ladder, striking upon her abdomen; on the following day she aborted. Since that time she has noticed, at times, a peculiar sensation in the right iliac region. Three years ago she first noticed, after a hard day's work at the wash-tub, pain in the right iliac region, followed by some distension, which subsided after resting for some time in the recumbent position. These attacks recurred at intervals, but always seemed to follow work at the wash-tub.

Three days before her admission she suffered an attack in the usual manner, but no relief followed a night's rest in bed. On the contrary, the swelling of the abdomen increased, as well as the pain. She was seen in consultation by Dr. H. B. Delatour with Dr. Wm. E. Stratton, when she presented the appearances of collapse, with quick, rapid, and feeble pulse; temperature 101° . She was taken to the hospital in the ambulance, and I saw her an hour later. She presented a tensely distended abdomen, with dulness everywhere except in the flanks; a distinct wave of fluctuation could be elicited upon percussion. She persistently denied having any enlargement of the abdomen except upon the occasions above referred to. It was evident, however, that a collection of fluid contained in a sac existed, and a diagnosis of ovarian cystoma with twisted pedicle, and sudden increase in the fluid contents thereof, was made. She was ordered to the operating-theatre, and the abdomen was opened in the median line. The tumor at once presented itself in the incision, and the diagnosis verified. The sac was almost black; it was cautiously punctured by the aspirator-needle and a sufficient amount of fluid withdrawn to relieve the tension; after which it was emptied by a large Emmet's trocar, over a gallon of fluid being obtained. Upon drawing upon the sac it was found to be absolutely free from adhesions, and when brought outside the abdominal cavity it was demonstrated that the tumor had rotated upon the pedicle to the extent of one and a quarter revolutions. The twist had taken place from right to left. After untwisting the pedicle, the latter was ligated

by the Staffordshire knot, the tumor removed, and the stump of the pedicle returned into the abdominal cavity. The patient made an entirely uneventful recovery, and at the end of the third week was allowed to sit up; in the fourth week she was discharged from the hospital cured.

The sac, upon examination, proved to be gangrenous, and ulceration had already commenced at a point upon the interior of the sac, at its posterior aspect.

A point of interest in the case is the probable cause of the rotation of the tumor upon the axis of the pedicle, and the direction of the twist. In all probability her occupation—that of a washerwoman—had something to do with this. While at work, with her abdominal wall resting against the edge of the tub, crowding the former in an upward direction while making the up-and-down movements peculiar to rubbing the pieces to be washed against the wash-board, she probably, by this combined pressure and upward crowding, rotated a small cyst upon the axis of its pedicle.

Lawson Tait asserts that the ovarian cystomata to which this accident most frequently occurs, spring from the right side, that the twist always occurs from left to right, and that this is a result of the passage of large masses of fecal matter from the rectum. But the rotation of this tumor in the opposite direction, together with the history, the attacks having only occurred in conjunction with or following the movements above referred to, have suggested to me that the rotation, in this instance at least, was due to the peculiar manual labor which the woman performed.

DANGERS FROM NECROSED TEETH.

BY WILLARD P. BEACH, M. D.

Mr. A. has been under my immediate observation for the past ten years, and his case illustrates very forcibly, at least one of the dangers of retaining necrosed teeth in their sockets.

About nine years ago the second bicuspid of the right upper jaw contained a cavity, which was filled with amalgam, and shortly afterwards commenced to ache severely. He insisted on having the filling removed and the nerve killed, which was done. A few months later the tooth died and blackened, and a sinus opened through the gingival mucous membrane in the region of the tooth's root. This state of affairs lasted about two years, when a series of small abscesses occurred

on the right pinna which lasted for about one month, and numbered ten or twelve in all. He recovered from the attack and was tolerably comfortable for a few months when the same experience was gone through with, but this seizure was more prolonged and severe. There were marked constitutional symptoms, and a large abscess made its appearance in the right temporal region. These attacks returned at intervals of a few weeks or months, for several years, each one being slightly more severe than the last, and finally involved the scalp of the right side. About this time a large abscess made its appearance on the knuckle of the little finger of the left hand, and the man commenced to show signs of marked reduction of health and strength.

I have inquired of several dentists as to whether they had ever known of a similar case, and they invariably answered in the negative.

I further noticed, that the vent in the mucous membrane closed, and it was shortly after such closure that the abscesses made their appearance. At last I decided to have the tooth extracted, which was done nearly a year ago, and since that time the patient has been in perfect health, which was an experience he had not known nearly all the time the dead tooth was in his head. The root of the tooth was very much softened and roughened, while the tooth socket and tissues surrounding it were quite sensitive to pressure.

To my mind, this was a case of septicæmia, which I can readily conceive to be the result of pent-up pus in the neighborhood of the dead root. I would earnestly recommend the removal of all dead teeth, for while we all know that necrosed teeth may be retained indefinitely without causing trouble in many instances, on the other hand, one such case as the above is sufficient to demonstrate that there is always impending danger of either septicæmia, pus in the Antrum of Highmore, necrosis of the alveolus, or numerous kindred affections, while a dead tooth is left in the jaw.

OBSTETRICS AND GYNÆCOLOGY.

BY E. S. MCKEE, M. D.
CINCINNATI.

The following is a brief report of what occurred in this department at the meeting of the American Medical Association, at Nashville :

Dr. Ely Van de Warker, Syracuse, N. Y., read a paper on "Stricture of the Urethra in Woman," in which he thought the frequency and seriousness of this condition of the female was not sufficiently appreciated. The most of the strictures he thought to be of the annular

variety, and situated near the meatus. He had no experience with electrolysis, but was of the opinion that it would only prove irritating to a sensitive urethra. The sound he considered utterly misleading, and was not an exploration of the parts. We should use those instruments which might be called those of precision, viz., the exploring bulbs.

Dr. Andrew F. Currier, of New York, spoke of the toxic form, and described a case occurring in his practice due to cantharides. Stricture in the male has been overestimated. Many cases are treated where treatment is unnecessary.

Dr. George J. Engleman, of St. Louis, said that this frequency of stricture in woman was something new to him. He would ask the essayist was it not an inflammatory condition rather than a narrowing. Has not used electrolysis, but a mild, sedative current; the positive pole of the galvanic battery, will act as a sedative to the irritated nerve and will often accomplish what Dr. Vanderveer seeks by dilatation.

Dr. C. B. Reed, of Middleport, Ohio, had found a self-retaining catheter worn part of the time to be very valuable. He once had a violent case of peritonitis follow a dilatation of the urethra.

Dr. A. F. Currier, of New York, read from the title, "A New Operation for the Relief of Prolapsus of the Anterior Vaginal Wall." The Doctor thought that lesions of the anterior vaginal wall had not been given the importance they deserved. And this importance is an argument in favor of its treatment. Prolapse may occur outside of parturition. The operation described was an oval cross-shaped denudation, the edges of which being approximated dispelled the prolapse. He had made the operation three times, but the time elapsing, five months, was hardly sufficient to decide as to the permanency of the relief, but everything pointed that way. As for cicatrix, no one would know that an operation had been performed.

Dr. Ely Van de Warker, of Syracuse, N. Y., thought the operation one well devised to cure the trouble, but if he would offer any criticism, it would be that more denudation should be made in the lower part of the vagina. He had made a number of successful operations after Dr. Reamy's method which has for its essential feature the going deeply into the connective tissue and giving a strong support to the sutures.

Dr. T. A. Reamy, of Cincinnati, remarked that it was very important to go deeply. He uses silk sutures. Suppuration does not occur after using catgut. He uses this suture also, but it may give out too soon. He leaves his sutures in two, and even three weeks.

Dr. A. W. Johnston, of Danville, Ky., thought ectropion of the bladder much like ectropion of the eyelids. Ophthalmologists used

to cut away the redundant mucous membrane till they found the ectropion was due to the shape of the eyelids. In ectropion of the bladder, we should repair the perineum. If the posterior part of the vagina is attended to, the anterior wall will have its support and will not prolapse.

Dr. George J. Engleman, St. Louis, said that his own experience with this operation had been unsatisfactory. He thinks it only profitable as an adjunct to the operation on the posterior wall.

Dr. Alexander Dunlap, Springfield, Ohio, was not in favor of leaving sutures in two and three weeks, but removed them on the third day.

A telegram was read announcing the sudden death of Dr. W. H. Byford, of Chicago.

"The Surgical Treatment of Non-Pedunculated Abdominal Tumors," was the subject of a paper by Dr. Henry O. Marcy of Boston. After reviewing in brief what is known of the origin and development of the cystic growths of the pelvis, the writer stated that developing beneath the deeper structures, they necessarily are inclosed by the peritoneum as an investing membrane; and that the demonstration made years since by the late Dr. Miner, of Buffalo, N. Y., has special value in this class of cases: the enucleation of the cyst by what he called the process of stripping the peritoneum from it. This Dr. Miner recommended in all the ovarian cystomata, without regard to the formation of a pedicle. For obvious reasons, this method thus generally applied fell into disuse, and has been largely forgotten. In that class of cases, however, where the development has left so broad an attachment that there is wanting a pedicle, Dr. Marcy advocates a modification of the method as presenting many advantages. This he practices as follows: After a partial emptying of the cyst contents, the peritoneum is divided at a considerable distance from the base of the tumor and the cyst is enucleated. The bleeding vessels are temporarily secured, and the peritoneal pocket thus formed is seized with large compression forceps and held by an assistant. The base, and if possible, which is surely not difficult, the attachment of the cyst should be sewed evenly through with an even, continuous tendon suture, in double stitch, effected by means of a long covered needle, set in handles with eye near point, and generally known to the profession after the name of the author. This suture encloses all the tissues, and when properly placed, not only controls hemorrhage, but constricts without necrosing the tissues. The superfluous structures are cut away to within an inch of the sewing, and the edges are intra-folded by a continuous tendon suture, the line of the stitches being taken parallel to the cut edges. This method of adjustment allows of the replacement of the parts

without strain or tension and closure of the abdominal wound without drainage. Dr. Marcy also advocates and practices suturing the basic uterine tissues after the removal of the fibroid tumors in a similar manner, his first observation and studies on the subject having been published about ten years ago. They are all founded upon the use of the buried animal suture (tendon for many reasons much preferred), itself aseptic, as aseptically applied in an aseptic wound. Dr. Marcy showed his tendon sutures, which are taken from the kangaroo's tail, which he has prepared in Australia.

Dr. T. A. Reamy, of Cincinnati, in discussing the paper, said, he was not so dumfounded by these cases as formerly, but had lost one case operated on before the class during the past winter. It was because the adhesions were so great. He should have abandoned the operation, introduced drainage, and left the cyst in situ.

Dr. Marcy, in reply to a question, said, that he would not under any circumstances use a drainage-tube, unless there was a septic condition present.

The President of the Section of Obstetrics, Dr. W. W. Potter, of Buffalo, in his address gave some advice as to the management of the Section. He favored the election of a vice-chairman of the Section, to provide against death, disability or detention; certainly a very good idea. It was advised that a register of the members of the Section be kept. A good recommendation, and one which has been tried before, but the trouble is to get the members to register. The Secretary, he thought, served just long enough to get acquainted with his work and the members, and his usefulness was greater at the close of his year of office than ever before. He would recommend that the Secretary be chosen with a reference to a certain amount of permanency. A good rule in all societies. His last recommendation was that the proceedings of the Society should be published in pamphlet form each year, the discussions to be reported by a stenographer, the expenses to be met by an annual subscription. Stenographers in medical societies have proved themselves next to worthless. It is doubtful if this recommendation can be carried out and whether it would be wise if done. It would look like the proceedings belonging to the journal, and the reports which appear in other medical journals are certainly about as near a trespass on the rights of the organ as can be permitted. The expenses would be great, and voluntary contributions are often involuntary.

The subject of antisepsis in obstetrics was discussed at length, and in a favorable strain. The elastic forceps were discussed, and commended, especially in cases where the head was only partially engaged at the brim, or in contracted pelvis, and to accomplish delivery through

traction in the axis of the brim where this was impossible with the classic forceps. The duration of the labor is materially shortened with a saving to both mother and children. In cases of impaction of the head in the pelvic basis with uterine inertia they are valuable.

The cancerous uterus, so long the *bête noir* of surgery, seems to be reclaimed to the realm of curability through a legitimate surgical procedure. Published reports show results which no other method can. With improved technique and the multiplied experience of operators in almost every city of the land, the method adds favor and silences adverse criticism. Whatever the future may bring forth, the operation of the present for cancer of the uterus, whether it be carcinoma of the body or neck, or epithelioma of the cervix, is vaginal total extirpation of the organ. Electricity in the diseases of women received the last, but not least consideration. Apostoli's published results are such as to challenge careful analysis of his cases and a thorough investigation of his methods. Electricity is now in the air, and advocates of it quote a list of prominent names in support, while those who oppose also name their men, probably of equal renown. The discussion of electricity in uterine myomata and ectopic pregnancy, followed, the general opinion being that abdominal section with its present improved technique, affords the surest chance of cure with the minimum risk. The real place of electricity in gynecology has not yet been determined, and its true value cannot, therefore, be properly estimated at present. Meanwhile, let us watch carefully, wait patiently, test cautiously, speak gently, and above all, adhere tenaciously to the mandate of the Apostle: "Prove all things; hold fast to that which is good."

Dr. F. H. Martin, Chicago, read a paper: "A Plea for Early Vaginal Hysterectomy for Cancer of the Uterus," in which he claimed that vaginal hysterectomy for cancer of the uterus will in the future give an immediate mortality among general operators of not more than 10 per cent. In the hands of experts it will not exceed 5 per cent.

Dr. L. H. Dunning, of Indianapolis, could not agree with the essayist in the sweeping assertion that total extirpation of the uterus was the operation *par excellence*. Any operation must fail unless all diseased tissues are removed. If the cervix is primarily affected, and only a part of it, removal of the cervix is all that is necessary. Hoffmeier's statistics show us that the amputation of the cervix is of less danger primarily and the longevity of the patient is greater. The speaker had done 25 high amputations of the cervix without a death. We should not remove the whole uterus in every case of epithelioma of the cervix.

Dr. H. Graff, of Claire, Wisconsin, had a case so much in point that he thought it worth reporting. It had been stated by the previous

speaker that cancer was a local disease, but he queried the truth of this fact.

Dr. T. A. Reamy, of Cincinnati, read the statistics of Dr. A. Martin, of Berlin, which he presented to the International Medical Congress at Washington. The speaker believed that skill will bring the operation to such perfection that it will not be a primarily dangerous one. As the Fallopian tubes are a part of the uterus, why would you remove the uterus and leave a part of it behind? Will anyone deny the anatomical and physiological proposition? He reported a case where he removed a cancerous cervix seven years ago. The specimen was submitted to Dr. Kebler, of Cincinnati, one of the best pathologists in that city, and under the microscope it proved to be a cancer. This patient is still living, and has two healthy, happy children. He had two other cases where he had done the same operation, and the patients also bore children. Had he removed this uterus, the result could not have been better, the dangers would have been greater, and she would not have had these children. If cancer commences in the body of the uterus, any man who would recommend any other operation than total extirpation would be foolish and dangerous. Why do so many cases of high amputation get well? Why have advertising quacks been able to remove mammary glands with arsenic paste, and the disease did not return, when in similar cases in which we have operated it does return? The less traumatic surface you can have, if you remove the whole disease, the better. The less surface you have and open vessels for absorption, the less danger you have for recurrence.

Dr. Wm. H. Wathen, of Louisville, was of the opinion that in a great many cases where amputation of the cervix had been made for cancer and the patient recovered, the diagnosis, be it either clinical or microscopical, was incorrect.

Dr. J. L. McIntyre, of St. Louis, wished to enter his earnest protest against the assertion that total extirpation of the uterus was an ideal operation.

Dr. Martin closed the discussion, and cited a case on which he was operating before the class at Chicago, and Professor Byford came along and told him to amputate the cervix and let the rest alone. He removed the entire uterus, and presented the specimen at the Chicago Gynecological Society, where it was cut open and the disease found to extend in a narrow line clear up to the fundus. This was examined by the pathologists of the Society, and found to be carcinoma.

Vomiting of pregnancy was introduced by Dr. E. W. Mitchell, of Cincinnati, who reported two cases, very severe in character. Both were multipara; both had obstinate vomiting in the first pregnancy with much prostration, which ceased spontaneously at three and one-half

months. Both had sustained some laceration of the cervix with some cicatricial deposit in the rent. Case first had an attack of puerperal fever after the first labor, which left her in an invalid state from which she had not recovered when she was again impregnated. Vomiting was so extreme, loss of strength so rapid, and the outlook so serious, that labor was induced by means of the faradic current. The patient made a prompt recovery. Case second became pregnant with her second child seven months after the birth of the first. Vomiting became so severe and so incessant as to prevent sleep, rectal feeding being necessary, and only partially successful. No remedy stopped the vomiting except opium by suppository or hypodermically. Rectal injections of chloral and bromide, and nitrate of silver to os were without benefit. Copeman's method of digital dilatation of the cervix was successful in stopping the emesis, but an abortion followed seven days later. Patient recovered.

RESOLUTIONS ON TUBERCULOSIS.

Presented at the Twenty-sixth Meeting of the United States Veterinary Medical Association, by L. McLean, V. S., Brooklyn, N. Y.

Whereas, We, the members of the United States Veterinary Medical Association, being sensible of the prevalence of bovine tuberculosis in the United States, particularly in the dairy stock of the eastern States, it being computed that at least from 10 to 15 per cent. are so affected in one form or another, and being satisfied of its infectious and contagious character and of its identity with tuberculosis, or consumption in the human family, and that it can be conveyed to others both by inoculation and ingestion, believing that a large percentage of this disease in mankind can be traced to this source :

Resolved, That we strongly condemn the use of the milk or flesh of animals so affected in any form, as an article of diet.

2. *Resolved*, That this Association urgently protests against the employment of empirics as meat or dairy inspectors; that such duties should be confined to duly qualified veterinarians having a comprehensive knowledge of comparative pathology.

3. *Resolved*, That the inspection of meat can only be properly conducted at the abattoirs.

4. *Resolved*, That all dairies should be periodically visited, the cows carefully examined and their condition reported upon to the local authorities.

5. *Resolved*, That a committee of three be appointed by the Chair to place these resolutions before the Secretary of Agriculture, so that national measures may be adopted by which this disease can be placed under the same category as contagious pleuro pneumonia, and to be similarly dealt with.

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EDITORIAL.

SUMMER AND ITS DANGERS.

"Why is it that so many persons return to the city, after a summer's outing, and soon are taken sick with fever?" This question is often asked of physicians; and that it is so often asked implies that there is some basis for it in fact. We imagine that there are many reasons, some of which are known, and others, probably equally potent factors, which are as yet unknown.

In the first place, healthy homes are left behind, for a more or less prolonged stay in malarial regions. Again, the capacity of hotels which are designed to accommodate fifty persons is stretched until more than twice that number are lodged within their walls, and the means provided for the disposition of the waste of the smaller number are so inadequate that soil-saturation and water-pollution inevitably result. Then, too, city houses are closed for months, and no provision is made for the filling of traps, the water of which gradually evaporates during the absence of its inmates, and when in the fall the family returns it is to a house into which, it may be, the air of a fever-infected sewer has been pouring for weeks.

Of course, the remedies at once suggest themselves to the thoughtful physician, and he should consider it his duty to advise his patients as to what they should do to avoid these dangers, not only to health, but to life as well.

A SENSIBLE SUMMER-RESORT.

One of the most enticing of the many advertisements of summer-resorts which we have received is that issued by Mr. W. T. Talbot, of Boston. Unfortunately its advantages are open only to boys, and we

should probably find it difficult to persuade the proprietor of Camp Asquam that we belonged to that class, otherwise we should be tempted to open negotiations.

Camp Asquam is a summer-camp for boys, on the southern border of Lake Asquam, in Holderness, and midway between Centre Harbor and Plymouth, N. H. The situation is unsurpassed in natural beauty by any spot in New England. The land is high and dry, and the camp commands fine views of mountains and lakes. The air is fresh and invigorating, and the best opportunities are offered for boating, swimming, and other healthful exercise.

The chief aim of the camp is to make the boys strong and efficient, and able to think and do for others as well as for themselves. To accomplish this purpose, each boy in turn has an appointed daily service of from one to two hours about the camp, and in this way learns the conditions for wholesome living in the woods. In order to induce a proper physical development, special attention is given to the needs of each boy, that he may learn the way in which best to perfect himself in breathing, walking, running, jumping, and other exercises; while the largest opportunities are afforded for tennis, base-ball, boating, swimming, as well as other summer sports, and always under proper and competent guidance. From time to time, throughout the summer, exploring expeditions are made in the surrounding country. In case of sickness, suitable nursing is provided at a house apart from the camp.

Far better would it be for our city boys could they spend a summer at such a place as this, rather than at Saratoga or Long Branch; the strength which they would gain and the practical knowledge which they would acquire would be of immense value to them in the battle of life.

PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular monthly meeting of the Medical Society of the County of Kings was held in the Society rooms, 356 Bridge Street, on Tuesday evening, May 20, 1890, at 8 o'clock. There were about one hundred members present. President Chase in the chair; Dr. D. Myerle, Assistant Secretary.

The minutes of the previous meeting were read and approved.

On account of the absence of the Secretary the usual report from the Council had to be omitted.

The following propositions for membership were received :

F. K. Priest, 64 Grove Street, N. Y. Univ., 1881-82; proposed by Dr. J. H. Droge; James C. Kennedy.

B. F. M. Blake, 120 Reid Avenue, Bell. Hosp. Med. Coll., 1890; proposed by Seth D. Boggs; Walter B. Chase.

R. C. Brewster, 134 Lafayette Avenue, L. I. C. H., 1890; proposed by Dr. Frank E. West; W. M. Hutchinson.

Geo. Dominguez, 97 Second Place, N. Y. Univ., 1886; proposed by Dr. L. W. Pierson; Wm. Maddren.

The following, having been favorably reported upon by the Council, were declared elected to membership :

Drs. Wm. Moser, Florence A. Belknap, Peter Scott, Jas. M. Sayles, Chas. J. Peterman, Geo. D. Barney, Wm. F. Dudley, Chas. H. Jones, Thos. U. Joyce, R. P. Thompson, Thos. Dixon and John Von Glahn.

SCIENTIFIC BUSINESS.

The first paper of the evening by Dr. J. Fuhs, entitled "Spasmodic Urethral Stricture," was read and discussed by Drs. Bolton Bangs, of New York, and Dr. H. W. Rand.

Dr. A. Ross Matheson then read the second paper of the evening, entitled "Report of a Case. Was it Hydrophobia?"

There being no further business, the meeting adjourned.

D. MYERLE,
Asst. Secretary.

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

TRIGGER FINGER.

Du Poirier (*Arch. génér. de méd.* August, September, 1889, *Centralblatt f. Chirurgie*, May, 1890). The peculiar conditions present in cases in which an arrest of the movement of a finger until a special effort is made, when it is completed with a jerk, generally occurring in flexion, more rarely in extension, had previously been investigated by Menzal, (*Centralblatt f. Chirurgie*, 1874), who attempted to support the

theory that this was due to narrowing of the sheath of the tendons, and knot-like thickenings of the same. P., however, in a series of investigations upon the cadaver failed to find a single instance of such narrowing or thickening, but on the contrary found certain changes in the joint, in which the articular extremity of the metacarpal bone, instead of representing a section of a complete globe, had undergone changes which resulted in the development of an eminence or impaction upon the smooth surface. The radius of motion, at this point, is lengthened by the riding of the opposing bony surface upon the eminence, and the lateral ligaments are placed strongly upon the stretch as this part of the movement is accomplished. The effort at flexion or extension continuing, the eminence is surrounded and the obstacle overcome, the tension upon the lateral ligaments is released suddenly, and the movement is completed with a jerk. The peculiar attachment of the lateral ligaments at the head of the metacarpal bone obliquely downward toward the epiphysis of the adjacent phalanx favors this mechanical condition. In the normal condition the lateral ligaments are sufficiently lax to permit free gliding movements.

The causes of this condition refer to rheumatic affection and traumatism. Similar conditions may occur in other points: for instance, the knee-joint. As for treatment, P. recommends anti-rheumatic treatment, massage and longitudinal extension. In traumatic cases, partial division of the ligaments is recommended.

EXTRIPATION OF TUBERCULOUS SEMINAL VESICLES.

Emerich Ullmann, Wien. (*Centralblatt f. Chirurgie*, No. 8, 1890). As far back as 1829 Dalmas mentions a chronic inflammation of the seminal vesicles in such terms as to allow the inference that he had to do with a tuberculosis of the same. Since then, this disease has been studied by Albert, Jay, Nauman, Humphry and Kocher, and observed particularly as a secondary affection in pulmonary tuberculosis by Rayer, Cruveilhier and Reclus, and in later times more accurately described by Guelliot.

Tuberculosis of the seminal vesicles as a secondary affection, occurs not only as a sequel to pulmonary tuberculosis, but likewise, as it would appear, still more frequently as following primary tuberculosis of the epididymis, either through the further progress of cheesy degeneration upon the vas deferens and from there to the connective-tissue capsule of the seminal vesicles, or by means of direct attack from the direction of the prostate.

Primary tuberculosis of the seminal vesicles is essentially a rare affection, and still more rarely is it recognized as such, as the absence of a primary pulmonary or epididymis affection throws one off the

track in making up the diagnosis. Hand in hand with the incomplete knowledge of the diseases of these organs, goes the fact that, up to the present time surgical interference in the same was not undertaken.

A trial of the operative treatment of the condition described was made by N. in the case of a lad of 17 years, who came under observation with a right-sided tuberculosis of the epididymis; castration was performed. The disease made such progress that in 40 days following the first operation, extirpation of the seminal vesicles was performed as follows: a half-circle-shaped incision was made at the perineum between the anus and scrotum, the base directed toward the sacrum. The finger of an assistant being placed in the rectum to guard against injury thereof, the perineal septum was separated. After separating the portions of the levator ani coming from the os pubis, and arresting the rather free hæmorrhage which occurs, the prostate is found to be completely bare. The rectum is further loosened, and with a sound in the bladder, the anterior wall of the latter is arched forward, whereby the vas deferens and the seminal vesicles are made visible to the eye and easily accessible. These latter organs, together with diseased portions of the vas deferens, and even of the prostate, may be then extirpated. The wound may be closed by buried sutures, or, in case the hæmorrhage demands such a course, tamponning with antiseptic gauze may be resorted to. In the case reported by N. the wound was first sutured, but the occurrence of an alarming hæmorrhage compelled a resort to the use of the tampon. In this case also, urine flowed from the wound for a short time.

Finally, according to N., the operation is to be recommended as justifiable in the following: 1. In case of primary tuberculosis of the testicle or epididymis, when suspicious symptoms have not occurred upon the sound side, and when upon the diseased side the seminal vesicles are entirely diseased. Should both seminal vesicles be involved and one vas deferens is not diseased, the latter is left undisturbed, the prostatic sinuses however being removed. 2. In case of primary tuberculosis of the seminal vesicles themselves.

The occurrence of permanent impotence is not to be urged as an objection to the operation. in view of the fact that, in all reported cases of tuberculosis of the seminal vesicles, this occurred in a comparatively short time, and indeed, it is believed to be a cardinal symptom of the disease.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

CÆSARIAN SECTION.

Hertsch (*Arch. f. Gyn.*, B. xxxvii., H. 1). Twenty-two Cæsarian sections have been done at Leipsic according to the Saenger method, with but one death,—seven within less than a year. In only three of these cases so far as known did a subsequent pregnancy occur. Two of them were delivered by artificial abortion, one by a second section. The latter patient was first operated in June 1887 and again in December 1888. The second operation was complicated by the fact that the uterus and loops of intestines were adherent to the abdominal wall and that a partial ventral hernia had developed at the site of the abdominal incision the fundus uteri lying forward between the thighs. The uterine incision was made through the fundus. A chromic catgut suture was encountered which had become firmly encysted, no absorption having taken place. Silk was used for the deep and juniper catgut for the continuous peritoneal suture. The woman was sterilized in compliance with her own request by ligation of the tubes. The case is the fourth in the literature of Cæsarian section in which the operation with uterine suture was repeated upon the same woman. Chromic acid gut in the Leipsic experience seems to justify what Leopold has claimed for it. The juniper gut appears to satisfy in still greater degree the requirements of a good suture in point of ductility and absorbability. That it may be made perfectly aseptic both their clinical results and bacteriological tests had abundantly proven.

The author thinks adhesion of the uterus to the abdominal wall more likely to occur when silver wire is used for the uterine suture than with absorbable catgut. The former acts as a foreign body and irritates. In experiments upon rabbits the application of iodoform collodion over the line of uterine suture served to prevent adhesion to the abdominal parietes. It had not, however, succeeded clinically. Stitching a fish bladder over the uterine incision was equally unsuccessful. After all, the abdominal adhesion is practically unimportant except on recurrence of pregnancy. The author advises the hypodermic use of ergot just before operating as a prophylactic against inertia uteri after delivery. He calls attention to the importance of carefully examining by percussion for intestinal loops adherent to the line of the old abdominal wound before making a second section.

THE COMPLICATION OF PREGNANCY BY FIBROMATA.

Phillips (*Annals Gyn. and Pæd.*, March, 1890). The following complications are liable to result from fibromata of the gravid uterus,

viz.: abortion, local peritonitis with intestinal adhesions and their consequences, obstruction of the pelvis necessitating a Porro or Cæsarian operation, abnormal presentation and death of the fœtus, adherent placenta, placenta prævia, insufficient uterine contractions, tardy involution, disintegration of the tumor and peritonitis, torsion of the pedicle and consequent gangrene.

GALVANISM FOR THE INDUCTION OF PREMATURE LABOR AND THE TREATMENT OF CERVICAL STRICTURE.

Bayer (Trans. German Gyn. Soc., Am. Jour. Obstet., April, 1890) comments upon the uses of the constant current in obstetrics. For the induction of labor stable applications of the electrodes are preferred. This method is more especially applicable where the cervix is but slightly prepared. It acts by loosening the cervical tissues. It is applicable also in spontaneous labor with rigid cervix and in physiological strictures of the neck of the uterus. For provoking contractions labile applications or intermitting currents are required. Twenty to twenty-five milliampères usually suffice. The cathode is placed in the cervical canal and a large diffusing electrode externally over the abdomen.

METHODS OF CRANIOTOMY.

Donald (Annals Gyn. and Pæd., April, 1890). Despite the fact that craniotomy on the living child is falling into disfavor, there is still a field for that operation. The following are some of the indications: Unsuccessful forceps or version cases in which the head cannot be extracted; death of the fœtus; such a condition of the mother that Cæsarian section would almost certainly be fatal; certain deformities of the fœtus. In the lesser degrees of pelvic deformity the author advises perforation and extraction by the forceps. In the higher degrees of deformity he advocates, first, version and extraction of the body, then perforation through the palatal process, cephalotripsy and extraction with the cephalotribe or by manual traction upon the body and the inferior maxilla combined with suprapubic pressure.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M. D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

VEGETARIANISM.

Dujardin-Beaumetz (Therapeutic Gazette, March, 1890) gives an exhaustive description of vegetable forms of diet, speaking of their relation to the individual and to the place of habitation. After giving the chemical composition of various kinds of foods, the author gives

certain indications for the vegetable diet. Ptomaines are the result of putrefaction, and immediately upon the killing of animal matter they commence to develop. They are, or may be, non-poisonous at first, but soon become toxic in character. Although not stated in the paper, we can suppose that in a condition of health the body can render such compounds inert. These organic changes, the author believes, are not so prominent in vegetable food, and there are certain conditions in the body where animal food is harmful and where vegetable food is a therapeutic agent. Certain of these are described :

1. Renal insufficiency (chronic renal disease).
2. Gastric dilatation.
3. Putrid diarrhœa.
4. Chronic gastritis.
5. All changed conditions of gastric juice.
6. Uric acid diathesis.

[NOTE.—The opportunity will here be taken of speaking of a treatment for pulmonary tuberculosis which is being used in this country : hot water and meat. It is certainly not unscientific to suppose that the term health refers to a bodily condition in which perfect strength, perfect function, and perfect harmony among all organs are present. When the lungs, in limited or extensive areas, are diseased, one of the organs that throw off excrementitious products is prevented from doing its usual work. Moreover, all consumptive patients are in a condition of auto-infection, and are constantly developing in themselves the products of tissue destruction, which the body must throw off. Therefore the other organs of excretion, the skin, liver, and kidneys, must do a twofold work. They must do the work of the lungs and also get rid of the poison developed in them. A considerable experience in post-mortem consumptive work has revealed in the great majority of cases chronic renal change, not always to be detected before death. It is certainly unscientific, because a certain line of treatment has benefitted one series of cases to use the same treatment in all cases of whatsoever nature. To give consumptives huge quantities of animal food, with a small portion of bread, prepared so as to be wholly non-nutritious, is opposed to all common-sense rules, and such treatment will invariably hasten death by causing additional circulatory disturbances.—H. C.]

THE WARNINGS OF GENERAL PARALYSIS OF THE INSANE.

Savage (of Guy's and Bethlem Royal Hospital, London), in a paper read before the Harveian Society, describes general paralysis as the disease of civilization. It is common in cities; it is not in isolated districts; the inhabitants of such districts have died of the disease after having lived in cities. It is regarded as a degeneration rather than a

disease of special lesion. It is found mostly in middle-aged married men. Constitutional syphilis is very commonly present. There may be a local origin to the disease, but the author does not believe that local surgical treatment will ever be of service in treatment, "for the degeneration follows on the predisposing condition."

The forms of onset are two: gradual and sudden. In the first it is always the higher faculties that show signs of decline. The artist loses his delicacy of touch; the actor fails in memory or enunciation; the artisan commits blunders in his work. Mental and bodily weaknesses show themselves. Probably for some time organic tissue-change has existed, and the onset runs parallel with the commencing degeneration, or, secondly, may manifest itself in an explosive manner.

The author has found that locomotor ataxy may be the first evidence of the disease, or may develop some time during its course. In certain cases the ataxic condition has not shortened life. Very valuable testimony is given in this connection from a series of cases in which ataxy has been present for several years, at the end of which general paralysis has made its appearance. *In such cases syphilis has always been present.*

The major part of the paper has been given to the early symptoms and signs, naming and describing them in detail. From this description we have made the following classification, coming under the head of

MANIFESTATIONS.

Early Fatigue.—Inability to work or walk; associated with mental indecision; hypochondriasis alternating with mental buoyancy.

Temporary Aphasia.—Sudden onset; sudden cessation; irregular recurrence; associated with fatigue: mild in character (trembling of lips); severe in character (complete); before great mental disturbance; before changes in handwriting.

Changes in Handwriting.—Peculiar formation of words; omission of words; separation of syllables; fatigue in writing; alteration in mode of holding pen.

Facial Expression.—The "fat" face; obliteration of lines of face; skin greasy; unilateral sweating.

Loss of Power and Sensation.—Fainting-fits; attacks of vertigo.

Sensory Defects.—Neuralgia; headache; double sciatica; rheumatic pains (these were found to be present a year or two before the general paralysis was recognized); loss of sight (temporary); affections of hearing; changes in taste; changes in smelling (inability to detect the smell of pepper is sometimes present).

Intellectual Changes.—Loss of power of social accommodation; memory defects; loss of attention; want of persistence; changed characteristics.

Instability.—Muscular tremors (fine muscles); uncertainty of gait; easily affected by alcohol; easily affected by poisons: pupils rapidly and somewhat persistently affected by atropine.

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

PREVENTION OF TYPHOID FEVER.

In a paper upon this subject, published in the *Annals of Hygiene*, 1889, p. 7, Dr. R. H. Reid concludes:

1. "Typhoid fever is caused by the introduction of a specific germ into the alimentary canal.

2. "That this germ multiplies in the alimentary canal, and in turn is thrown off in the stools of the patient.

3. "That its vitality is much greater than at first supposed, resisting a variation of temperature ranging from even below the freezing point to 133° F. without being destroyed.

4. "That the germ may be communicated from one person to another by water, milk, foods and air.

5. "To prevent its spread, all dejecta should either be burned at once (which is preferable) or thoroughly disinfected, by throwing them into a pot of boiling water and thoroughly cooking them, or using some effective germicide, such as a strong solution of bichloride of mercury, in sufficient quantities to be sure of their destruction before they are buried, which should be at a sufficient distance from any neighboring water supplies as to insure their freedom from contamination.

6. "If the water supply is of a suspicious character, thoroughly boil it before using, and then place it where there is no possibility of its becoming infected. If ice is to be used to cool the drinking water, keep it out of the water, only packing it around the water-vessel."

In an article on the same subject, in the same journal, p. 225, by Dr. Stephen B. Smith, he gives the following suggestions, as means of stamping out this infectious disease:

First of all comes the absolute need of destroying in every instance the excreta, or the germs therein, as they are expelled from the patient. This should be made a legal necessity. Then, when as much attention is given to the plumbing, draining and ventilation of the home, as in

many instances, is bestowed upon decoration, this dreadful disease ought gradually to disappear.

He thinks the water supply and drainage are the two sources most liable to cause infection. Therefore, stationary wash-basins should be excluded from all sleeping rooms, and all waste pipes should be in plain view. Filtered rain-water he regards as the safest water in the country, and well-water should be boiled for drinking purposes. Ice-water should not be taken, and meats and foods should not come in contact with ice used to cool them. The outlet of a refrigerator must not be connected with a sewer. It is the duty of the physician to inform his patients upon these points, and to see to it that they make use of the information.

The New Haven, Conn., Board of Health has issued a circular upon the prevention of typhoid fever, as follows: "Have the patient sleep alone. Burn all food left by the patient. Boil all dishes for 15 minutes after the patient has finished using them. Clothing removed from the patient and bed should be disinfected by soaking them for half an hour in a *weak solution of carbolic acid made by mixing two and a half ounces of pure carbolic acid with a gallon of water.* Then remove them from the solution and boil in common water for half an hour. All discharges from the kidneys and bowels must be received into vessels containing about a pint of *strong solution of carbolic acid, made by mixing five ounces of pure carbolic acid with a gallon of water.* The discharges must remain in the disinfecting solution one hour before being thrown into the water-closet or privy.

"All persons who handle or have anything to do with the patient, should wash their hands repeatedly with soap and water and pay great attention to cleanliness."

Most State and Municipal Boards of Health now issue similar circulars relating to this disease, and yet it is to be feared that those most in need of information in country districts never see them.

TYPHOID FEVER IN PHILADELPHIA.

Philadelphia receives a part of its water supply from the Schuylkill River, which, in 56 miles receives the drainage of over 100,000 population, besides the drainage of Laurel Hill Cemetery, estimated to contain 80,000 graves. Philadelphia has the credit of the highest typhoid death-rate of any city in the world.—*Annals of Hygiene.*

DISINFECTING POWER OF TOBACCO.

Mr. V. Tarsinari has been investigating the disinfecting power of tobacco smoke. Smoke from a cigar or cigarette was drawn over a piece of linen, which had been dipped in a liquid containing microbes

of various kinds. When the cigar was finished the linen was at once placed in a cultivation tube. The experiment was repeated with a number of micro-organisms, including those of cholera, anthrax and pneumonia. Check experiments were of course made in which the smoking was omitted.

The result in every case was to greatly retard, and in some cases to prevent the growth of the organisms. These experiments sustain the popular idea that tobacco smoking is a preventive of the infectious diseases. (*Annals of Hygiene*, 1889, p. 92).

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital; Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

NOTE SUR LE DÉVELOPPEMENT DU CANCER DE L'ESTOMAC.

Microscopical investigation of two cases of gastric cancer gave Raymond (*Rev. de Méd.*, 1889, No. 10) essentially different results. While the first case revealed on examination a neoplasm formed after the type of cylindrical epithelioma, the second was of the alveolar type, with polymorphous cells, or glandular epithelioma. In both the secondary growths resembled in every respect the primary tumor.

CONTRIBUTION TO OUR KNOWLEDGE OF THE EFFECT OF SLEEP ON THE RENAL SECRETION.

From twelve series of experiments Glum (*Centralblatt für med. Wissensch.*, April 5, 1890, No. 40) finds the average quantity of urine voided during 12 day hours to be 911 c.cm., and during 12 night hours 661 c.cm., making the ratio of activity 100 : 72.

Based on the specific gravity after Trapp-Haeser, the elimination of solids for every day hour is 3 grms. and for every night hour 2 grms. The flow of urine increases immediately after sleep—"Quencke's morning urine flow."

Short interruptions of sleep in persons who readily fall asleep again after awakening induce no increased flow of urine.

During the night, up to morning, the urine voided becomes constantly more concentrated. The separation of the urine into strata of varying specific gravity (*Edlefsen*), in consequence of which the first portion voided is of higher specific gravity than the last, affords further proof, according to G., of the diminished renal activity during sleep.

(This contribution has a very important bearing on the method to be pursued for the analysis of urine for detection of renal disease.—V. C.)

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital. Curator and Microscopist, New York Eye and Ear Infirmary.

PATHOGENESIS AND NEW TREATMENT OF SYMPATHETIC OPHTHALMIA.

Abadie (*Annales d'Oculistique*, 1890, p. 183) upholds the microbic theory of the etiology of this important disease. The cases present themselves in general about as follows: An eye is wounded, and the wound becomes infected, either from lack of sufficient antisepsis or from a contaminated condition of the wounding agent. The microbes develop in the wound as a centre, penetrate one after another the deeper parts of the eye, then to the chiasma through the optic nerve, and finally the other nerve and eye. If no obstacle be interposed, the second eye becomes irremediably disorganized, and blindness results. It has long been known that by early enucleation of the wounded eye sympathetic trouble could be avoided; but it is to Leber and Deutschmann that we owe our present more exact knowledge of why this is so, our knowledge that the infected wound is the hot-bed for the micro-organisms, and that this hot-bed should be removed before the germs have passed up the nerve. At the wound the germs encounter tissue injured, bruised, and of less vital energy than themselves. Here they grow with great rapidity and first commence their work of disorganization. When their number has become considerable and their vitality great, then, and only then, are they in a condition to attack healthy tissues, and, by radiating from the wound as a centre, to reach the deeper parts of the eye. In consequence, early enucleation is successful, and even when a sympathetic ophthalmia is clearly declared, the removal of the wounded eye will take with it the principal focus at which the development of the microbes takes place with the greatest intensity. But this alone may not be sufficient, for invasion of the second eye may have already occurred. If this invasion be recent, the germs will be few in number and but little able to effect the disorganization of the healthy tissue in which they find themselves. Either the leucocytes or the normal cells of the tissues (upon this point bacteriology is still obscure) are in a condition to destroy them, their number not being re-enforced by others coming from the original wound, and the patient recovers. This happy result will be decidedly favored if, besides the enucleation, the patient be subjected to the action of mercurials. If, on the contrary, the enucleation be done late, when the

second eye has been long since invaded, when its tissues, profoundly altered, are no longer in a state to struggle victoriously against the great number of germs which never cease to invade it, if, furthermore, one content himself with surgical treatment without the added use of mercurials, the second eye will be completely disorganized and the enucleation of no avail. It is important to remember that when an eye has recovered from sympathetic inflammation (either by enucleation of its fellow or by other means), it should not be interfered with by operation for a long time. The cocci retain their vitality, and any weakening of tissue-resistance, as by operation, will serve but as a signal for them to renew their activity.

When an eye is so severely wounded that its usefulness, both for vision and for cosmetic considerations, seems immediately lost, the question of enucleation may arise; but Abadie thinks that even here this may be avoided in the majority of cases by proceeding as follows: First, by the strictest antisepsis, one should seek to avoid infection. Should this, however, ensue, the wound should be thoroughly cauterized in all its recesses with a fine galvano-cautery (under chloroform). This will not always suffice to hinder the development of sympathetic trouble, and in such cases Abadie has sought to arrest it by injecting into the eye destined to be enucleated one or two drops of sublimate solution (1-1000). These injections cause for several hours an active irritation; but little by little this subsides, and the condition of both eyes is improved. The author cites a very instructive case, that of a woman aged sixty, who by a fall sustained a rupture of the left eye. Seen a few hours after the accident, she presented an enormous rupture of the sclera, nearly two centimetres long, through which the lens had been forced out and part of the vitreous prolapsed. The wound was carefully washed with sublimate solution (1-2000) and an antiseptic dressing applied. The patient came regularly for treatment, and all went well for three weeks, when suddenly such active sympathetic trouble arose that the patient could in a few days scarcely find her way about. Rather than enucleate the left eye, in which the wound had nicely cicatrized, Abadie decided to try to save it. He cauterized the then insignificant prolapse of vitreous, and with a Pravaz syringe injected into the wounded eye two drops of a 1-500 sublimate solution. The reaction was extremely active and pain violent. On the following day there was considerable pericorneal injection, and the posterior surface of the cornea was opaline. But gradually the reaction diminished and the cornea regained its transparency. At the same time the vision of the sympathizing eye rapidly improved, so that after two weeks it was almost normal, while with the wounded eye the patient could then count fingers at several meters.

At the end of four months the cure was complete, and with a proper glass (+15. D.) the patient could read with the wounded eye. Abadie also cites other successful cases, one of them one in which neither enucleation nor general mercurialization had checked the sympathetic trouble, which, however, yielded to an injection of one drop of sublimate solution (1-1000)—of course, in this case, into the sympathizing eye.

Enucleation should, he thinks, be reserved for cases of such extreme disorganization as to leave no hope of saving the injured eye. Even in the case of severe wounds, if, in spite of strict antisepsis, sympathetic ophthalmia occur, it will be better to at once explore with a fine galvano-cautery all the irregularities of the wound, and then to inject one or two drops of sublimate solution (1-1000), than to enucleate. In this way one is often not only able to arrest the sympathetic trouble, but also to improve the condition of the wounded eye otherwise destined to be sacrificed. Finally, when, in spite of everything, either from delayed interference or because enucleation itself has failed to check the trouble, one has to do with a single remaining eye already profoundly disorganized by the sympathetic inflammation, before making any operative attempt (iridectomy or extraction of the lens) to restore vision, one should wait till the virulence of the microbes shall have been lost. This will be more easily accomplished if one inject into this eye one or two drops of bichloride solution (1-1000).

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital; Assistant Surgeon, Brooklyn Throat Hospital; Instructor in Diseases of the Nose and Throat, New York Post-Graduate Medical School and Hospital.

LUPUS OF CHEEK, PALATE, AND TONSILS.—CAUTERIZATION: RECOVERY.

J. F. Goodhart (Lancet, No. 3425). The patient, a female, aged twenty-six, had ulcerated throat each spring and autumn for past five years. During last two years throat has been constantly sore, some pain during swallowing, and an increasing deafness. No history of syphilis. Examination shows that the posterior two-thirds of hard palate, soft palate, uvula, faucial pillars, tonsils, and inner surface of right cheek are covered with thick layer of granulation-tissue, which is soft and spongy, and projects in parts considerably above the level of the

adjacent mucous membrane. In some portions there is a distinct ulceration. Inhalations of calomel were tried, but caused only irritation, no benefit. Applications of cocaine, morphia, and iodoform were made; they relieved the pain, but had no effect in checking the growth.

The whole affected surface was then gone over several times with the large blade of a Paquelin's cautery. As the margin of the growth in the sides of the pharynx could be reached, there was no difficulty in accomplishing this thoroughly. This process was repeated after the inflammation resulting from the first cauterization had subsided, in order to secure a complete destruction of the growth. A severe irritation of larynx was caused by the intense heat of the cautery; this was controlled by a large ice-bag about the neck.

At the end of a month it was apparent that the growth had been entirely obliterated, the affected parts appearing quite normal, except for the presence of some faint cicatrices.

CHRONIC RHEUMATIC LARYNGITIS.

E. Fletcher Ingals (*Jour. Lar. and Rhinol.*, April, 1890). This affection is due to same causes as muscular or articular rheumatism, and is attended by only slight physical changes in part affected. It occurs generally during spring and fall, and is most commonly found in male adults. There are no anatomical characteristics, beyond a slight circumscribed congestion.

The disease comes on insidiously, and general health is not impaired. The patient complains simply of localized pain, frequently referred to the cornu of hyoid bone; next most common site is the larynx, generally only on one side. It may be felt in trachea, tonsils, or at base of tongue. Pain is increased by pressure, phonation, and deglutition, but is occasionally absent while the patient is eating. The pain may shift its position, though frequently is persistent in one locality. Sometimes, instead of actual pain, the sensation may be of fullness, swelling, or dryness, itching, and burning. Usually voice is not altered in character, but may be easily fatigued. We find no constitutional symptoms. If larynx is extensively involved, the hacking, annoying cough is a symptom. Digestive organs apt to be slightly impaired, tongue coated, eructations of gas and flatus troublesome. Bowels constipated.

The laryngeal congestion is found about site of pain. The affection is liable to be mistaken for neuralgia, enlarged glands at base of tongue, enlarged veins, chronic follicular tonsillitis or glossitis, tobacco sore throat or cancer. The essential points in diagnosis are pain (varying with weather), rheumatic diathesis, and absence of any direct physical signs.

Local applications of tinct. of aconite are recommended; also tinct. of iodine or nitrate of silver (in a sixty-grain solution) has proved beneficial. Most important is the internal treatment of salol, the salicylate of sodium, iodide of potassium, guiac, phytolacea, and oil of gaultheria. Obstinate cases have yielded best to phytolacea extract, four grains, combined with salol, ten grains.

AN OPERATION FOR CORRECTING DEVIATION AND THICKENING OF CARTILAGINOUS NASAL SEPTUM.

Jonathan Wright (Med. Record, January, 1890). The object of this operation is removal of sufficient of the redundant cartilage from the convex side of the septum to make it perfectly pliable at point of greatest convexity. The septum is then pushed over toward the free nostril, and held there by plugs until healing in the desired position has occurred.

The method of accomplishing this result is as follows: After cocaineization of parts, the thickness of septum is ascertained at point of greatest projection into the stenosed nostril, also the length of the deviation in an antero posterior direction. By the nasal trephine a hole is bored from the anterior to the posterior surface of the deviation in such a manner that it goes as close to the mucous membrane of the concave side as possible without perforating it. This gives an open tunnel throughout the length of the thickened cartilage. A saw is inserted in this channel and used to separate the outer segment from the inner by sawing upward and then downward, keeping close to the median line, and thus removing a large portion of the thickened cartilage from the convexity.

The preliminary use of the trephine, besides removing considerable cartilage, makes it possible to go close to concave side of septum without perforation, and gives a groove in which to start the saw.

The septum should now be found pliable on pressure. In wedging it over, plugs of absorbent cotton, soaked in sublimate solution, may be used. The wedging and antiseptic douching should continue until septum is firmly fixed in the new position.

In this operation the flap-method might be used; but this would render it longer and more difficult: besides this, the granulation and cicatrization themselves tend to draw the septum toward a straight line.

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

THREE CASES OF PULMONARY TUBERCULOSIS IN YOUNG INFANTS, WITH A REPORT UPON THE DISTRIBUTION OF THE LESIONS IN TWENTY CASES OF INFANTILE TUBERCULOSIS.

Chas. G. Kerley, M.D. (N. Y. Med. Jour., May 10, 1890). The first case was one of "acute pulmonary tuberculosis, with a small cavity." Subject was a child five months old, with a history of phthisis in the mother's family, and died after an acute illness of one month, having been sick with symptoms of broncho-pneumonia. Autopsy showed right lung covered with recent fibrin and studded with miliary tubercles. In the upper lobe was a cavity of the size of an almond, communicating with several smaller cavities, all containing pus. Part of the lower lobe was consolidated, and pus was found in the bronchi. Left lung had scattered miliary tubercles, and in the posterior half were evidences of hypostatic pneumonia. Bronchial glands were enlarged and cheesy. No tubercles found in other organs.

The second case was a child two years old whose mother had died of phthisis. The child had entero colitis, followed by broncho-pneumonia with pleurisy. Child recovered in part, evidences of consolidation remaining. Some four months afterward an exacerbation occurred; high fever; more consolidation, etc. Meningitis developed, from which child died. Autopsy showed moderate tubercular meningitis, some tubercles in the lungs and spleen, but in no other organ. There were also old adhesions of lungs to chest-wall and to diaphragm, areas of broncho-pneumonia enlarged, cheesy and broken-down bronchial glands.

The third case was in a feeble child one year old, who, up to four days before death, showed symptoms only of athrepsia; It then became prostrated, refused food, coughed a little, and died of prostration, not having had a temperature higher than 99° F. Autopsy showed in both lungs cheesy nodules about as large as a pea, and in the anterior border of the left lung a cavity as large as an English walnut.

These three cases are especially interesting considering the ages of patients, the difficulty in distinguishing tubercles from broncho-pneumonia and the fact of cavities.

In twenty autopsies made at the N. Y. Infant Asylum of cases of infant tuberculosis, the author notes that "in seventeen cases there was a fairly even distribution of tubercle on surface and in substance of the lung. There was tuberculosis of the lung in every case but one; of the lung only, in two. In twelve of the cases there were cavities; and in five of the remaining eight, cheesy nodules, some breaking down. The organs were involved in the following order of frequency: Lungs, nineteen; spleen, fifteen; brain, eleven; liver, nine; intestines, ten; kidney, three; peritonæum, one; and pericardium, one. Bronchial glands enlarged in every case, same with mesenteric glands, and in many cases broken down. A positive tubercular history in *three cases only*."

SYPHILIS AFTER VACCINATION.

(London Hospital Gazette, March 8, 1890.) The case was referred to in the House of Commons. The mother of the child requested calf-lymph to be used in vaccinating the child, but the doctor evaded, by saying that he would use "pure lymph." Vaccination was performed in March; child died from syphilis in July. The government inspector found that the child's family was free from any syphilitic taint, and that no other children vaccinated by the doctor had suffered. "The point most to be regretted is that the doctor did not use calf-lymph for the purpose of vaccination as requested by the mother."

HOW TO WASH OUT A BABY'S STOMACH.

Dr. A. Seibert (The Dixie Doctor, April, 1890). "A No. 10 A soft rubber catheter is attached to a glass tube six inches long. The operator is seated before the child, which is held upright (as in throat inspection) or is one side. The left index-finger of the operator is held between the right upper and lower maxilla, just so as to prevent the mouth from closing. Then the tube is passed over the tongue into the pharynx, the head of the child inclining slightly forward. By gentle pressure we overcome the spasmodic constriction of the upper pharyngeal muscles, and then the catheter glides easily into the stomach. Now, the left hand holds the catheter and the right attaches the lower end of the tubing of the fountain-syringe or regular irrigator over the glass tube attached to the catheter. Water is now allowed to flow, and after the stomach is filled, the supply is shut off, the tube detached and the end of the glass tube lowered below the child's umbilicus, so the contents of the stomach come up very nicely. Never use force. No trained assistant is necessary. The tube will never enter the larynx. The younger the babe, the easier it is to wash its stomach."

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital ; Attending Physician, Brooklyn Hospital ; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

CONCERNING RESORCIN, AND A PARTICULAR METHOD OF USING IT IN SKIN DISEASES.

Dr. P. Dreckman-Recklinghauser (*Monatsheft. f. Pract. Derm.*, Vol. X., No. 9, p. 389). The author gives the credit of the discovery of resorcin to Hlasiwetz and Barth, 1863, it being a product formed by transposition of elements in various of the resins under treatment. In 1868 it was first prepared synthetically by Körner, from metajodphenal and kalium, and first employed and recommended by Andeer. Since then its use has become common, and advantageous in various forms of skin disease. He looks upon it as possessing antiseptic, anti-fermentative, and antifebrile properties, and further that if used in too strong a manner on account of these very properties it may become harmful, if not absolutely toxic.

He believes Andeer is right in using it, particularly in cases of acute infectious diseases of the skin in particular.

The author goes on to quote a number of German authorities, as Nussbaum, Ihle, Rubing and others, who used this medicament with always beneficial, and sometimes extraordinarily good effect, in the treatment of variola, sycosis parasitica, herpes tonsurans, epithelioma, etc., and further remarks that it was left to Unna, of Hamburg, to find or describe its method of therapeutic action, the latter dermatologue having included it among his "reduction" medicinal agents, by that meaning it was one of those substances that wherever applied to the surface in skin disease it also had a tendency to deprive the part of some oxygen ; as is claimed by Unna, does chrysarobin, pyrogallol, ichthyol, sulphur, linseed oil, etc., thus causing a relatively more rapid hardening of the young epithelial cells.

The author then goes on to speak of the use of the impermeable bandage, using the names of a great many European medical men, but without referring to the U. S., in which country I believe it was first used for the treatment of skin diseases.

After a great deal of unnecessary writing as to the well-known disadvantages of (at least) continuous use of the impermeable bandage applied next the skin, the doctor goes on to describe his method of using the remedy, which he does by a mediate application ; bandaging first with soft and absorbent bandages, saturating these dressings with

about a three-per-cent. solution of resorcin, and putting a waxed-cloth dressing over the whole instead of a rubber, as being less irritating and offensive, etc., so that for instance the limb affected may be surrounded with a continuous warm vapor and the volatilized remedy.

He gives various cases of obstinate eczemas where it has been used with good result, which is doubtless so. He adds, however, that where its use is needed for stronger action the salves are preferable. Also true according to our opinion.

ON THE PRESENCE OF MERCURY IN A TAPEWORM COMING FROM A SYPHILITIC PATIENT BEING THEN TREATED BY MERCURIALS.

Dr. Ludwig Oelkers (Centralblatt. f. Bacteriologie, Nov. 7, 1889) says: A syphilitic patient in one of the clinics at Göttingen, being at the time treated by mercurial inunction, passed from time to time segments of tape worms, which attracted attention by their gray color. By microscopic examination the presence of mercury was established in the vas deferens, in some of the vasa efferentia, and testicula of the parasite. The vagina appeared as a veritable mercurial tube. Also in the parenchyma of the limbs generally were to be seen everywhere minute particles of metallic mercury. The observer states, in conclusion, that notwithstanding this relatively great amount in the parasite, its vital functions did not seem to have been impaired thereby! !

ON THE CONNECTION OF GENITAL AFFECTIONS WITH THOSE OF THE SKIN.

Dr. E. Frank (Prag. med. Wochenschrift., No. 6, 1890). At the meeting of German Medical Society in Prague, Dr. Frank related a case of urticaria chronica complicated (caused by?) with bilateral oöphoritis and salpingitis. After radical operation for relief of latter affections, she remained entirely free from the skin affection. Dr. F. believes this to be entire proof of the nervous or reflex character of that affection in this case. The connection of cause and effect were entirely manifest. Synchronous beginning of both troubles, increase of symptoms and eruption at the menstrual period, etc., and complete cure when the offending organs had been removed.

A CASE OF SCARLATINA INFECTION BY MEANS OF A LETTER.

Dr. Nikolski (Wratsch, No. 37, Russia). At a manufactory in the beginning of January, 1888, numerous cases of scarlatina appeared. Among others affected was a young girl, æt. nine, who, about the end of the second week of her sickness, wrote a letter to a girl friend, named B., who, though a scholar, had not been to her school, nor had for a long time left her village home, which was perfectly free from scarlet fever. About four or five days after receipt of the letter, she began to suffer from the prodromata, and five days later the eruption had broken out fully.

BACTERIOLOGY.

BY B. MEADE BOLTON, M.D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

PROTECTIVE INOCULATIONS.

(Continued from page 425.)

Kitt's experiments with rouget du porc gave similar results to those with chicken-cholera. He substantiated Pasteur's observation, that the virulence of the organism was weakened by its passage through rabbits; but the fæces from hogs inoculated with attenuated cultures were found to be virulent for other domestic animals and for birds. Hess and Guillebeau found protective inoculations for rouget du porc unsatisfactory.

It is apparent, therefore, that the question of the practicability of protective inoculation for animals is not yet settled. Protective inoculation in human beings has been less studied than inoculations in animals, from the nature of the case. Among the first experiments under the former head come Fehleisen's inoculations with cultures of the streptococcus of erysipelas, for the production of erysipelas, with a view to arrest the growth and cause the disappearance of malignant growths. These inoculations differ in principle from all the inoculations mentioned above, in that their object is to produce, secondarily, an entirely different disease, which in some cases is found to supplant the more severe primary affection. Fehleisen was justified in these experiments by the clinical observation that malignant growths sometimes disappear if the patient acquires an attack of erysipelas. Fehleisen's results were encouraging. The artificial production of erysipelas, in the way above described, has been repeatedly tried of late years, and often with the best therapeutic effect. Persons who have recently had an attack of erysipelas are not susceptible to the disease by inoculation. This method of preventing and curing a disease by inoculating cultures of micro-organisms of other diseases has been tried to a considerable extent upon animals; but it has been restricted as yet to laboratory experiments, and has not been tried practically upon the large scale for the prevention or cure of natural outbreaks. The starting-point for these experiments was Emmerich's observation; that animals inoculated with virulent cultures of anthrax bacilli, and either simultaneously, immediately before, or directly afterward, in the same spot with cultures of erysipelas streptococci, did not die. Pawlowsky, in consequence of this observation, made a large number of experiments upon animals. He inoculated with cultures of anthrax with various other organisms together. He found that local malignant pustule in animals could be prevented by inoculating into the seat of disease several different kinds

of micro-organisms; but he got the most uniform results by injecting Friedländer's so-called *pneumonia bacilli*, either simultaneously with or subsequent to the inoculation with anthrax. Inoculations with cultures of pus staphylococci and anthrax gave similar results. Inoculations of cultures of *bacillus prodigiosus*, after inoculations with cultures of the anthrax bacillus, also prevented the latter from producing the disease, though not so uniformly. Where cultures of anthrax bacilli were injected into a vein, the Friedländer's bacillus was the only one which had any effect in arresting the appearance of anthrax, and this was successful only in rare cases.

The protective inoculations for hydrophobia have attracted more interest by far than any other efforts in this direction. For the benefit of those who are not familiar with the fundamental principle, and gradual development of these inoculations, the following *résumé* of Baumgarten (Jahresbericht ü. d. Fortschr. i. d. Lehre v. d. path. Mikro., etc., Braunschweig, 1887) may be of use:

"After Brown-Séquard and Duboué had already made it appear very probable that the main seat of disease in hydrophobia is in the central nervous system, Pasteur established positively that the hydrophobia poison is, at least in the most concentrated form, if not exclusively, in the above-named tissues. Pasteur, moreover, found that the surest way to transfer the disease is by means of subdural application of cerebral substance of animals suffering with hydrophobia, while the subcutaneous transfers are less sure. Almost without exception the animals inoculated under the dura with small amounts of the above-named substance died of raving hydrophobia, after a period of incubation of from fourteen to twenty-one days. In general, the smaller the amount of the substance inoculated, the longer the period of incubation. Pasteur then found that the passage of hydrophobia poison through the bodies of apes weakens the virulence; while the passage through the bodies of rabbits increases the virulence. By inoculation from rabbit to rabbit through forty or fifty generations [individuals], Pasteur obtained a '*virus fixé*' with exactly seven days' period of incubation, which differs from the ordinary, so-called '*street hydrophobia*,' not only in this short period of incubation, but also from the fact that subcutaneous inoculations, as well as subdural, produce fatal hydrophobia *without exception*. By successive passage of the virus which had been attenuated in the body of an ape, through rabbits, Pasteur obtained a series of hydrophobia material for inoculation of graded virulence which he used as vaccines in dogs. He believed these vaccines rendered dogs immune from the poison of street hydrophobia, according to the results of his experiments in this direction. Later on Pasteur used another method of attenuation and inoculation, which seemed so trust-

worthy and at the same time so free from danger that he held that he was justified in risking its use on man. He used it on a large scale on persons who were bitten by animals which were either mad or supposed to be so, and this example of Pasteur's was imitated, as is well known, in different countries. The process referred to rests upon Pasteur's discovering that the substance of the spinal cord of animals which have died of hydrophobia loses its virulence gradually from day to day if it is dried out, at a constant temperature of 20° C., over anhydrous potassium hydrate. In sixteen to eighteen days the substance so treated loses its virulence entirely, and the subcutaneous inoculation of dogs with the weaker virus (dried for a longer time) protects them from the effects of the stronger virus (dried for a shorter time), and so are finally protected against the poison of street hydrophobia: moreover, differing from the results of all other methods of protective inoculation, not only protecting against subsequent infection, but also against the infection which had already taken place."

(To be continued.)

PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.,

Associate Director of the Department of Physiology and Experimental Therapeutics,
Hoagland Laboratory, Brooklyn.

THE TROPHIC ACTION THAT THE NERVOUS SYSTEM EXERCISES UPON THE OTHER TISSUES.

(De l'action trophique que le système nerveux exerce sur les autres tissus.—By Dr. D. Baldi). This recent work of Dr. Baldi, done at the Physiological Laboratory, at Florence, and published in *Lo Sperimentale*, April, 1889, and *Archives Italiennes de Biologie*, December 31st, 1889, gives a good running résumé of the views of the earlier observers; and adds the valuable results of a series of experiments of his own. His work consisted in cutting;

(a) THE EFFERENT FIBRES—by cutting the anterior roots of the spinal nerves.

(b) THE AFFERENT FIBRES—by cutting the posterior roots.

(c) THE SPINAL CENTRES INTO WHICH THESE FIBRES RUN.

He then carefully noted the effect of thus destroying one or another part of the reflex arc, as seen in changes produced in the parts to which these nerves run.

He divides the time of the experiment into two periods:

1. From the time of operating until all effects of shock and other transient disturbances have disappeared.

2. From the end of the first period to the death of the animal.

In the first stage he has noted the changes reported by nearly all

earlier observers, viz., vaso-dilatation, rise of temperature in the parts affected, and the beginning of more serious lesions, which persist into the second stage. One of the most important of these is a kind of necrosis, due to death of the tissues, which is first marked by an erosion of the claws followed by a loss of hair from the back of the foot, then an excoriation, which first only affects the epidermis. If the animal is allowed to walk, and put this foot unprotected to the ground, the wound extends rapidly into the dermis and subjacent tissue, lays bare the joints and may cause the loss, not only of the phalanges, but also of the metatarsal bones. By properly wrapping the paw so as to prevent pressure on the ground, these extensive lesions may be avoided; or, if taken at their first appearance, their progress may be arrested.

He has also observed eczemas, erythemas and alopecias such as have been found by other observers to result from injury to the spinal cord, but he has never seen in either the first or second stage, anything like the formation of subcutaneous abscesses, except where there was a general infection by the absorption of pus. When the posterior roots of the nerve to the fore-limb of one side are cut, that limb loses the tonicity of its muscles, and the limb hangs from the shoulder. The trophic lesions occur, but are not so rapid in their development, for the limb is not pressed to the ground in walking. The most rapid development of the erosions occurs when all the posterior roots of the lumbosacral region are cut. The animal then has incontinence of urine and feces, the hind legs are continually soiled and this irritation hastens the changes.

If an animal, on which the lesion to the nerves has been made only on one side, was wounded on two legs, one of which was normal and the other effected by the nerve lesion, the wound would heal very slowly on the side of the lesion, but much more rapidly on the well side.

If spots were shown or the nails clipped, the loss was made up as in the normal dog on the well side, but exceedingly slowly on the injured side.

Baldi makes the interesting observation that these phenomena are the same whether the lesion be to the anterior root, the posterior root or the spinal centre, thus demonstrating the fact that every part of the reflex arc is equally necessary for preserving the proper conditions of nutrition in a part.

He cannot accept the theory that the trophic lesions are due to vaso-motor changes, for he can produce them late in the second stage, when the hyperæmia resulting from vaso-motor paralysis has disappeared.

He objects to the theory that loss of sensation prevents the animal from keeping his paw out of harm's way, by showing that the erosions occur when the anterior roots to one leg only are cut, and the animal

has perfect sensation in the one leg, and uses his other three legs to keep the injured one out of trouble.

He refers to the slow growth of hair and nails in a foot whose reflex arc has been cut in one of its parts and from this infers a diminished ability to make good a loss on demand. He then refers to the wear and tear on a foot used in walking, and thinks that this is greater than the foot without its reflex arc can supply. In favor of this assumption he adduces his results that the lesions may be prevented by properly protecting the paw.

[The chief point of interest in this paper is the suggestion that all parts of the reflex arc are equally important in maintaining the *nutrition* of a part. On this assumption, many trophic lesions may be satisfactorily explained, which are now attributed sometimes to the loss of *sensation*, in consequence of which the animal is not aware of irritating foreign bodies, and hence cannot remove them; and sometimes to the cutting of trophic fibres. K.]

NEW BOOKS AND BOOK NOTICES.

All books received by the JOURNAL are deposited permanently in the Library of the Medical Society of the County of Kings.

HOW TO PRESERVE HEALTH. By Louis Barkan, M.D. New York : Exchange Printing Company, 1890.

The object of the author in the preparation of this book was to furnish the public an available hand-book of hygiene, and also a guide for the sick-room, in order that patients and their friends might be brought into closer accord with the aims and methods of physicians. The subjects discussed are many and various and are handled with skill. If readers carry out the advice given they will fulfil one of the principal aims Dr. Barkan had in mind in writing his manual, the preservation of health and the avoidance of sickness.

A HAND-BOOK OF DISEASES OF WOMEN, including Diseases of the Bladder and Urethra. By Dr. F. Winckel, edited by Theophilus Parvin, M.D. Second edition, revised and enlarged, with 150 illustrations. D. c. Philadelphia : P. Blakiston, Son & Co., 1889.

This is a translation of the first edition of Winckel's well-known "*Lehrbuch der Frauenkrankheiten*." The work before us differs principally from the original in that it contains a section upon Diseases of the Female Urethra and Bladder, derived chiefly from Winckel's monograph. In discussing this latter subject complimentary references are made to Prof. Skene's Treatise on the Diseases of Women, and to his method of treatment.

A GUIDE TO THE DISEASES OF CHILDREN. By James Frederic Goodhart, M.D., F.R.C.P. Rearranged, revised and edited by Louis Starr, M.D. Second American from the third English edition. With numerous formulæ and illustrations. D. c. Philadelphia : P. Blakiston, Son & Co., 1889.

In the English edition the author has endeavored to make his Guide more useful to the student and young practitioner, by amplifying the directions relating to diet in infancy and by inserting recent methods of treatment which experience has shown to be successful. Dr. Starr has made this volume of still greater value by the thorough manner in which he has treated the subjects of "Feeding Infants and Children," and by inserting typical temperature-charts, an entirely new feature in works on children's diseases. The book is one which should be in the library of every practitioner.

MISCELLANEOUS.

In the time of Queen Elizabeth the following excellent rules were given by Wm. Bulleyn for an apothecary's life and conduct.¹

"THE APOTICARYE."

- Must fyrst serve God, forsee the end, be clenly, pity the poore.
2. Must not be suborned for money to hurt mankynde.
 3. His place of dwelling and shop to be clenly to please the sences withal.
 4. His garden must be at hand with plenty of herbes, seedes and rootes.
 5. To sow, set, plant, gather, preserve and kepe them in due tyme.
 6. To read Dioscorides, to know ye natures of plants and herbes.
 7. To invent medicines, to chose by coloure, tast, odour, figure, etc.
 8. To have his morters, stilles, pottes, filters, glasses, boxes, cleane and sweete.
 9. To have charcoles at hand, to make decoctions, syrups, etc.
 10. To kepe his cleane ware close, and cast away the baggage.
 11. To have two places in his shop—one most cleane for the phisik, and a baser place for the chirurgie stuff.
 12. That he neither increase nor diminish the phisician's bill (i. e., prescription), and kepe it for his own discharge.
 13. That he neither buy nor sel rotten drugges.
 14. That he peruse often his wares, that they corrupt not.
 15. That he put not in *quid pro quo* (i. e., use one ingredient in the place of another when dispensing a phisician's prescription) without advysement.
 16. That he may open wel a vein for to helpe pleuresy.
 17. That he meddle only in his vocation.
 18. That he delyte to reede Nicolaus Myrepsus, Valerius Cordus, Johannes Placaton, the Lubik, etc.
 19. That he do remember his office is only to be the phisician's cooke.
 20. That he use true measure and weight.
 21. To remember his end, and the judgement of God; and thus I do comende him to God, if he be not covetous, or crafty, seeking his own lucre before other men's help, soccour, and comfort.

The apothecaries of the Elizabethan era compounded their medicines much as medicines are compounded at present, as far as manipulation and measuring are concerned.

Prescriptions have altered, but shop customs have undergone only a comparatively slight change.

The apothecaries table of weights and measures still in use, was the rule in the 16th century, and the symbols remain at this day just what they were three hundred years ago.

The apothecaries to whom these directions were given were only tradesmen—grocers—who paid attention to the commands of physicians.

They were not required to have any knowledge of the medical science beyond what might be obtained by the perusal of two or three writers; they were not to administer drugs on their own judgment and responsibility, or to perform any surgical operation, except phlebotomy, and that only for one malady.

The custom was for the doctors to sell their most valuable remedies as nostrums, keeping their composition a secret to themselves, and taking the price paid for them by the sick.

The commoner drugs were vended by the drug-merchants (who invariably dealt in groceries for culinary use, as well as in medicinal simples), acting under the directions of the learned graduates of the faculty.

¹ Jeaffreson's "Book about Doctors," p. 69.

BROOKLYN VITAL STATISTICS FOR MARCH, 1890.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated April 1st, 859,612	The number of Births reported was.....	1189
In the month of March there were 1513 Deaths, the rate of mortality being 20.90 per 1000 of population.	The number of Marriages reported was.....	398
	The number of Still-births reported was.....	124

The Mortality, by classes and by certain of the more important diseases, was as follows:

Causes:

1. Zymotic.....	229	Malarial Diseases	3
2. Constitutional	289	Diarrhœal Diseases (all ages)....	10
3. Local.....	834	“ “ (under 5 years)	3
4. Developmental	127	Phthisis.....	182
5. Violence.....	34	Bronchitis	105
Measles	5	Pneumonia	211
Croup.....	38	All Respiratory	354
Diphtheria	105	Bright's Diseases.....	33
Scarlet Fever.....	11	Puerperal Diseases.....	11
Typhoid Fever.....	7	Old Age.....	41
Whooping Cough.....	17	Suicide	10
Influenza.....	2		

Reported Cases:

Diphtheria	245	Measles	128
Scarlet Fever.....	161	Typhoid Fever.....	25

Deaths, by sex, color, and social condition, were as follows:

Male.....	833	Native.....	1009
Female.....	680	Foreign.....	504
White	1479	Married.....	456
Colored.....	34	Single.....	831
Widows, Widowers and not stated.	226		

Still-births, excluded from list of deaths, were as follows:

Males.....	64	Total	124
Females.....	60		

Deaths in public institutions	133	Homicides.....	
Deaths in tenement houses.....	430	Suicides.....	10
Inquest cases.....			115

Age Periods:

Deaths under 1 year	318	Total deaths, 5 to 20.....	108
“ “ 5 years	243	“ “ 20 to 40.....	270
Total deaths under 5.....	561	“ “ 40 to 60.....	283
		“ “ 60 and upwards.....	291

Certain foreign and American cities show the following death-rates for the month of March 1890:

Brooklyn.....	20.90	Vienna.....	27.15
New York.....	24.54	Paris.....	28.31
Philadelphia	21.04	London	22.35
Berlin.....	22.20	Glasgow.....	30.35
Dublin.....			32.20

BROOKLYN VITAL STATISTICS FOR APRIL, 1890.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated April 1, 1890, 859,612	The number of births reported was	1134
In the month of April there were 1436 deaths, the rate of mortality being 20.18 per 1000 of population.	The number of marriages reported was	469
	The number of still-births reported was	108

The mortality by classes and by certain of the more important diseases was as follows :

Causes :

1. Zymotic	214	Malarial Diseases	4
2. Constitutional	251	Diarrhoeal Diseases (all ages)	17
3. Local	812	“ “ (under 5 years)	9
4. Developmental	110	Phthisis	157
5. Violence	39	Bronchitis	94
Measles	11	Pneumonia	212
Croup	33	All Respiratory	343
Diphtheria	88	Bright's Diseases	30
Scarlet Fever	15	Puerperal Diseases	11
Typhoid Fever	7	Old Age	20
Whooping Cough	9	Suicide	4

Reported Cases :

Diphtheria	260	Measles	218
Scarlet Fever	177	Typhoid Fever	25

Deaths by sex, color, and social condition, were as follows.

Male	762	Native	971
Female	664	Foreign	455
White	1397	Married	394
Colored	29	Single	823
Widows, Widowers, and not stated			209

Still-births, excluded from list of deaths, were as follows:

Males	56	} Total	108
Females	52		
Deaths in public institutions	142	Homicides	1
Deaths in tenement houses	433	Suicides	4
Inquest cases			115

Age Periods :

Deaths under 1 year	312	Total deaths, 5 to 20	108
“ “ 5 years	265	“ “ 20 to 40	252
Total deaths under 5	577	“ “ 40 to 60	245
		“ “ 60 and upwards	244

Certain foreign and American cities show the following death-rates for the month of April :

Brooklyn	20.18	Vienna	27.82
New York	24.66	Paris	25.83
Philadelphia	20.89	London	18.85
Berlin	22.32	Glasgow	27.60
Dublin			16.97

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ORIGINAL ARTICLES.

NOTES ON THE PREVENTION OF PULMONARY CONSUMPTION.

BY PAUL H. KRETZSCHMAR, M.D.

Read before the American Public Health Association at its Brooklyn Meeting, 1890.

Consumption is a disease which depends for its origin upon infection by a micro-organism known as the bacillus tuberculosis of Koch, and while it is true that the most careful researches fail to demonstrate its presence in about ten per cent. of well developed cases of pulmonary consumption, it is conceded by a vast majority of authorities that without bacilli there is no consumption and that they can be found in every case at some stage or another, and always post-mortem.

United as to the source of infection, observers differ widely regarding the question of direct contagion from a diseased person to a healthy one. Excellent authorities have written upon the side of those who proclaim that the danger of contagion lies in the air exhaled by the patient; and Hermann Weber has gone so far as to speak of cases of direct infection between husband and wife, and *vice versa*. After a careful study of the subject, the writer has arrived at the conclusion that there are no cases on record which prove that consumption is transmissible from person to person. All instances quoted by those teaching the contrary views can be explained by the results obtained through Dr. Cornet's experiments.

The invasion of the bacilli into the human organism takes place through either the respiratory or the alimentary tract, although cases are known in which the bacilli found their entrance into the system through an abrasion in the integument. The most frequent channels of infection are the air passages. Considering the large quantities of bacilli which are constantly expectorated by phthisical patients and the carelessness with which both the medical profession and the laity treat such expectorations, it is fair to presume that ordinary atmosphere, such as we breathe in our large cities, is loaded with bacilli and that every human being inhales them frequently. Extensive observations have proven that individuals living upon a high physiological plane are comparatively free from danger of infection, and that a certain disposition does exist in most instances which enables the bacilli to invade the human organism successfully. Although it is difficult to give a perfect definition of such disposition, certain changes have been demonstrated to exist in most cases, and we are in a position to-day to predict the development of pulmonary consumption with a considerable degree of accuracy if well-defined anatomical and functional derangements exist and if the subject is exposed to the danger of infection. Conspicuous among the animals liable to tuberculosis are cattle, and in a less marked degree sheep, hogs, chickens, rabbits, etc. The time allowed for this paper prevents the discussion of the danger of infection from the use of milk or meat derived from tubercular animals; suffice it to say, that such danger exists, and that it deserves more attention than it receives at present. Intelligent supervision of animals which furnish food for the human race is an essential factor in carrying on a successful struggle against the development of pulmonary consumption. No one, however, will contradict the statement that the vast majority of all cases of pulmonary consumption are acquired by people—favorably disposed to the development of the disease—by inhaling the deadly bacilli. To make any progress in our efforts to prevent the development of pulmonary consumption, we have to concentrate our endeavor in two directions: first, to destroy or diminish the number of bacilli which float in the atmosphere; and, second, to prevent the development of the disposition of the human organism to acquire consumption. In proportion as we succeed in either direction, we will diminish pulmonary consumption.

If we could devise means to destroy all the bacilli which float in the atmosphere the most important progress in medical history would be recorded; but there are no indications visible anywhere that would encourage labor in that direction, and our best efforts must be made in the direction of diminishing the quantity of bacilli which surround us. Considering the fact that probably one-sixth of the entire human

race suffers from tuberculosis at some time or another, and that every phthisical patient is the source of millions of tubercular bacilli, the difficulty of even this undertaking becomes apparent.

Isolation of all consumptives has been suggested and will be discussed at the next International Congress for Tuberculosis, to be held in Paris early next year. A number of distinguished members of the medical profession have expressed views favorable to such a plan, but the writer cannot permit this opportunity to pass without placing himself on record as utterly opposed to it. Isolation had been practiced long before Koch demonstrated the bacillus of tuberculosis.

In Naples and in Portugal¹ laws existed a hundred years ago which placed consumption upon equal footing with pestilence and small-pox. The laws in Naples were of the most stringent character, and existed in the same form for about fifty-five years without affecting the prevalence of consumption to any marked degree. If the advocates of isolation would reflect for a short time and consider the hardship and injury which would follow its introduction, affecting as it would a large proportion of the human race and seriously interfering with our entire social life, without giving the slightest assurance of better results than those obtained after many years of trial in Naples and Portugal, one would think that they would hesitate to advocate so inhuman a proposition. It will not be denied by them that a very large proportion of consumptives are phthisical subjects long before they themselves are aware of it, and even physicians frequently treat "alveolar catarrh" as bronchitis until the microscope demonstrates the fact that the patient's expectorations are full of tubercular bacilli. What benefit would be derived by isolating advanced cases of pulmonary consumption if cases during the early stages are permitted to deposit millions of microbes with their expectorations upon our streets, in our churches, public halls, railroads, and all over their own residences? And, finally, what advantage would isolation have if carried out in the State of New York and not in New Jersey or Pennsylvania, or if adopted by the United States and not in Canada? Isolation is not only cruel, but it is entirely infeasible, and the sooner the medical mind is directed in other channels the better it will be. Even if isolation were practical, the benefits derived therefrom would not be greater than would be the benefits if the spittoon were to obtain the position in our daily life to which it is entitled, or if proper attention were paid to disinfection of the patient's clothing and wash, the furniture and the floor, and if the carpet were banished from every dwelling inhabited by consumptives. Of all the experimental researches and investigations made recently

¹ *Berliner klinische Wochenschrift*, 1883, No. 24.

regarding the infectious nature of pulmonary consumption those of Dr. George Cornet (*Zeitschrift f. Hygiene v. Bd.*, p. 192 et seq.), of Berlin, are of the greatest value, and it is only fair to say that through his labors the prophylaxis of pulmonary consumption has advanced to a scientific basis. His teachings should be preached wherever the general welfare of the masses is considered. Dr. Cornet's experiments should be our guide in our efforts to prevent the development of pulmonary consumption, for they demonstrate, first, that the consumptive, *per se*, is not, and second, that the sputa are the source of danger, not in the moist state, but decidedly so if dried, pulverized and suspended in the air. If the air which passes through pulmonary cavities and is afterward exhaled by the patient is free from bacilli, if the sputa containing them are free from danger as long as they are moist and if it is positively proven that dried sputa contain the bacilli and are of the most dangerous character, we have laid out for us a well-defined plan to prevent the spreading of consumption. It is not necessary to isolate the unfortunate patients or consider them personally dangerous to their surroundings, but it is of vital importance to destroy the bacilli contained in their expectorations as soon as possible, or to deprive them of the power of doing harm. To obtain this end it is necessary to apply means to keep the expectorations of consumptives—and as we are frequently in doubt when coughing depends upon tubercular invasion, it would be safest to include all those suffering from disease of the lungs—in a moist state. To do this it is necessary that the masses learn to expectorate into spittoons, not, as is customary now, into handkerchiefs; and it would be advisable to teach the great importance of this lesson to our children in the schools, and never to cease preaching about it until it becomes the usual habit of people to do so. Where do we find to-day a receptacle for expectorations? Not in our public offices, not in large stores, not in our school-houses, not in railroad cars (except in Pullman's palace cars), not in railroad stations, not in any place where large numbers of people assemble, not even in our houses, and yet it is a fact that without such receptacles—partially filled with appropriate solutions, and properly cleaned at frequent intervals—our efforts to prevent the development of consumption are futile. The importance attached to the use of a receptacle for expectoration of even doubtful character by advanced phthisio-therapeutists is demonstrated by the fact that Dr. Dettweiler, of Falkenstein, presented a pocket flask before the last German Medical Congress, held in Wiesbaden, in April, 1889, which is intended to be used by people who suffer from cough, if spittoons are not handy; and by the adoption of these flasks for use among his patients by Dr. Hermann Brehmer in Goerbersdorf. My friend, Dr. P. Dettweiler,

kindly sent me a sample flask, and I present the same for inspection and consideration to this meeting. There seems to be room for improvement in the construction of the flask, but the theory which is involved in its use is an admirable and sound one, and is the foundation upon which all advance of preventive medicine relating to pulmonary consumption must rest. Another very important step in the right direction is the prompt and sufficient disinfecting of the patient's clothing, bedding, wash, furniture, and of the walls, the ceiling and the floor of his apartments. It is essential that the soiled linen should not be allowed to accumulate, but it should be washed at frequent intervals and under proper precautions. To properly clean carpets is so difficult an undertaking that the room occupied by consumptives should not be carpeted—linoleum being preferable.

Positive instructions should be given to patients suffering from cough never to swallow their expectorations; aside from the fact that self-infection producing tuberculosis of the intestines is to be feared, the fæces containing tubercular bacilli would—if they are allowed to become dry, and such is the case in many instances—become the source of great danger. If we have done our full duty regarding the dangerous expectorations, if the spittoon has been rehabilitated and even made one of the necessities of life, and we have convinced the popular mind thoroughly that consumption is a preventable disease and that it is spread broadcast by carelessness principally, we may expect to see the number of deaths from consumption diminish.

The second duty of preventive medicine, regarding pulmonary consumption, is to diminish the probabilities for the development of the disposition to acquire the disease, and to protect those who present such disposition from the disease itself. The bacteriologist pure and simple, the man who learned all he knows in the laboratory experimenting upon the lower animals, will dispute the importance of the disposition, and will say, "before the tubercular bacilli all mankind is equal;" but he who has derived his knowledge from bedside observations and study of the diseased organs will unquestionably admit the danger to which those are exposed who present what Rokitansky so admirably describes as "phthisical habitus," viz.: a small heart situated in a chest of abnormally short anterior posterior diameter, with abnormally long perpendicular dimensions, containing large, voluminous lungs, and a proportionally small abdominal cavity. Of course, not every one who carries with him a fertile soil for the development of the tubercular bacilli presents all the morphological and anatomical changes which make the phthisical habitus, nor does every one presenting these peculiarities described by Rokitansky acquire consumption, but to ignore the importance of his statements, or to deny the

fact that the existence of the conditions included in the description of the phthisical habitus, enables one to predict with a considerable certainty, the development of consumption at some future period, would mean that bedside and general clinical experience are of little value regarding the etiology of disease. For the object under discussion now, it is most important to demonstrate, if it can be done, under what circumstances and conditions the disposition referred to is developed, whether it is possible to lessen the probabilities of producing offspring who carry with them the burden of such a predisposition, and, finally, whether we have means at our command to diminish the danger of acquiring consumption among those thus afflicted.

The question of inheritance has always been considered one of vital interest among those interested in the study of pulmonary consumption; the views now held generally, deny the existence of "congenital tuberculosis," but the disposition to acquire the disease is most commonly found among the offspring of consumptive parents, and about one-third of all phthisical patients come from either paternal or maternal parentage suffering from consumption. Sometimes it may be difficult to decide whether the inherited disposition, or the long-continued exposure to infection by means of bacilli derived from the dried sputa of the parents, is a greater source of danger to the offspring, but the importance of disposition becomes at once apparent if we follow the admirable and practical teachings of Dr. Hermann Brehmer, of Goerbersdorf, the recognized father of all practical phthiso-therapy, and investigate the patients' family histories, extending back to their grandparents. Without going into any details the writer makes the statement that, with a large experience among many cases of pulmonary consumption, both in private and in hospital practice, he unhesitatingly indorses Dr. Brehmer's views as to the development of a disposition to acquire pulmonary consumption among the offspring of apparently healthy parents.

1. If there are many children in a family, those born after the sixth or after the seventh are apt to develop pulmonary consumption.
2. If the children in a large family are born at short intervals, say one year, the younger ones are apt to develop pulmonary consumption.
3. If the offspring of healthy parents, born under conditions named above, escape the disease, their products are apt to develop pulmonary consumption.

These teachings are probably new to most of my hearers but the writer has been convinced so thoroughly of their truth and importance regarding the prophylaxis of pulmonary consumption that he invites all members of the medical profession to go

to work at once and put them to the practical test of clinical experience. Patient and diligent inquiries into the family histories of many consumptives, induce the writer to make the following strong statement: "Only a small proportion of phthisical patients can be found who do not possess a family history which either demonstrates a directly inherited tendency, or a directly (Section 1 and 2) or indirectly (Section 3) acquired disposition toward the development of the disease." A most interesting and valuable contribution to this important subject is given in Dr. Brehmer's recent publication (*Mittheilungen aus Dr. Brehmer's, Heilanstalt, Wiesbaden, 1889*; p. 2, c. c.), investigating the previous history of those who visited his sanitarium in Goerbersdorf, during the year 1888, and the following is a short digest of it. Five hundred and fifty-six patients visited the sanitarium during 1888, 4 patients suffered from other diseases than phthisis, 46 patients failed to give a satisfactory history; of the remaining 506 cases as many as 184, or $36\frac{3}{10}$ per cent., were offsprings of consumptive parents or grandparents, viz.: 65 times from father's side, 76 from mother's side, 14 times from both parents, 16 times from the father's parents, 12 times from the mother's parents, and twice from the grandparents of both father and mother. These figures demonstrate that in many instances (16 per cent.) phthisis is developed in subjects whose parents were apparently healthy, but were the offspring of phthisical parentage. Of the remaining 322 cases, as many as 109 belonged to families with many children, none of them, however, being higher in the scale than the sixth, and 38 cases belonged to families where the mother had children rapidly, mostly in intervals of one year. This group of "acquired disposition" embraces 147 cases (29 per cent.), only 7 per cent. less than that of "inherited disposition." Of the whole number of 506 cases, 175 remained unaccounted for, but 153 of them have it in common that the patient's parents have been born under conditions described in Section 1, but have themselves escaped the development of phthisis to the date of writing; in 77 cases the indirectly acquired disposition was derived from the father, who was at least the sixth child in 63 instances, and who was born only one year after the preceding child in 17 instances. The mother was the source of acquisition 65 times (respectively 54 and 11 times). Finally, there were 11 cases where both parents belonged to subjects classified in Section 1. This leaves 22 cases out of 506, and of those 15 had it in common that either one of the patient's parents or grandparents was suffering from epilepsy or was insane. Seven cases out of 56 did not present any conditions which would indicate a disposition to the development of pulmonary consumption. The writer's own statistical notes do not cover so much material, and he found considerable difficulty in obtain-

ing any reliable information about the patients' grandparents; but, generally speaking, Dr. Brehmer's researches have been verified by the writer's experience.

With such proofs before us is it not our duty to teach those depending upon us for advice how offspring of healthy families are made to become predisposed to develop consumption, and that marriage of consumptives is to be strongly discouraged? It is important to know what can be done to protect those with an inherited or acquired unfavorable disposition from becoming victims of the tubercular bacilli, and it is unfortunate that this important subject has been seriously neglected by those otherwise interested in the field of preventive medicine. We know that not all offspring of healthy parents, with large families after the sixth child, become consumptives, nor do all those born in close intervals with the other children, nor even those of consumptive parents, die of tuberculosis. There are, however, certain functional and structural changes which, when found existing in young subjects, indicate serious danger of future tubercular infection. In line of their importance these deranged conditions of the human system are:

1. Those anatomical changes in the formation of the chest which help to present what is known as the phthisical habitus.
2. The fact that the subject is and always has been a small feeder.
3. The fact that, during the age of puberty, the patient has suffered from palpitation of the heart.
4. The fact that, at the same time, and frequently for years afterward, the patient has been suffering from epistaxis (nose bleeding).

If these abnormal conditions, or part of them, are found in subjects whose family histories raise the sign of danger, it is necessary to use such means as will diminish the danger of future infection. Medication is of no value, but a transfer of the threatened subject to a proper climate will do much to prevent the future development of pulmonary consumption. The writer is thoroughly convinced that certain elevated regions enjoy comparative immunity from phthisis, and that a removal of those cases which warrant an unfavorable prognosis regarding the development of consumption to such parts, would save many lives. The establishment of a high school for both sexes at Davos Platz is a step in the right direction.

The selection of a calling for such subjects deserves the most careful consideration, and the prospect of living an out-door life should have great weight in deciding the question. Many instances are known to the writer, where subjects who presented all the indications for becoming consumptives, are enjoying good health, living in certain elevated regions and pursuing an out-door life.

The time allowed for this paper prevents anything like a thorough discussion of this highly interesting subject, but it is to be hoped that these notes will help to arouse the interest of this Association in this vital branch of preventive medicine.

PREDISPOSITION TO PULMONARY PHTHISIS, AND THE PROPHYLACTIC VALUE OF PULMONARY GYMNASTICS.

BY GEORGE A. EVANS, M.D.

Read before the Medical Society of the County of Kings, March 18th, 1890.

It is the consentient opinion of those who have given the subject careful study, that pulmonary phthisis requires for its development two concurrent etiological influences—predisposition, and the tubercle-bacillus—neither of which in the absence of the other is competent to give rise to the disease. Certain animals have a natural predisposition for tuberculosis, while others are almost invulnerable to its influence. In man, however, we have not only various degrees of predisposition in different individuals, as determined by heredity, but we have also varying degrees of predisposition as determined by such circumstances as may casually operate to influence constitutional vigor, or to modify that power of resistance to pathogenic principles normal lungs are known to possess. Rhindfleisch¹ calls attention to the remarkable similarity between the predisposition of “certain animals” for tuberculosis, and the occurrence of tuberculosis in a certain group of persons—the scrofulous.

The result of inoculations made with bacillus-culture by Koch and many others, with the careful, systematic, and scientific manner in which they were carried out, has been generally accepted as proving the tubercle-bacillus to be the virus *per se* of tubercle, and therefore the exciting cause of pulmonary phthisis.

If we regard predisposition as fertilization, and tubercle-bacilli as seed, we will fully appreciate the important relation of the former to the latter, and at the same time be led to inquire: Which of the two factors offers the greater degree of vulnerability to our armamentarium?

I think it may be affirmed without fear of contradiction, that the tubercle-bacillus is an ubiquitous micro-organism.

¹ Rhindfleisch, in Ziemssen's Cyclopædia, etc.

No one familiar with the subject would care to risk a contention with Hirsch when he says: "Like typhoid fever, phthisis dogs the steps of man wherever he may be found."

Böllinger has shown that a cubic centimetre of phthisical sputum contains from 810,000 to 960,000 tubercle-bacilli. The average consumptive, therefore, expectorates between thirty and forty millions of these parasites in a day, eight hundred, however, are necessary to inoculate a rabbit or guinea pig with tuberculosis.

Miguel, as quoted by Bell, Dennison and many others, found 55,000 germs, embracing many varieties, in the floating dust of ten cubic metres of the air of the *rue de Rivoli*, Paris. Careful observers have demonstrated that tubercle-bacilli enter the body not only through the respiratory organs, which possess, as we have been informed, a superficial area of two thousand square feet, but even to a greater extent through the digestive tract, and recent investigations, notably those of Villemin, Weigert, and Ernst, have shown uncooked animal food, particularly cow's milk, to be a very frequent source of infection.

If we accept, therefore, as a settled fact that this micro-organism exists everywhere among the habitations of man, familiar as we are with its life-history, it must be admitted we have little reason to hope ever to be able to influence its career at large, although we may find it possible, through good management, to lessen the liability of individual cases of phthisis to inoculate others.

Many efforts have been made to discover a bacillicide competent to destroy tubercle-bacilli in the lungs of the phthisical without injury to their tissue. These efforts have all been notoriously unsuccessful, and I am perfectly willing to put on record the statement, that no such bacillicide will ever be found; and, further, that if this contention is ever shown to be wrong, it will be of no advantage to the phthisical; for were it possible to destroy all the bacilli in a given consumptive's lungs, they would soon be replaced in his tissues from the atmosphere, which the investigations of Miguel, Cornet, Flick and others force us to believe, contains them in the form of floating dust.

In a paper on "The Influence of the Microbe Theory on the Treatment of Phthisis," that was read before the New York Academy of Medicine, May 16, 1889, Dr. W. H. Thomson said: "He had never expected any specific treatment to be of permanent value in phthisis on account of the organic nature of the tubercle-bacillus. . . .
"He did not know of anything that the farmer could use that would kill weeds but not the potatoes in his field; and in like manner we

could not expect to find an agent that would kill the tubercle-bacillus in the body and yet not do injury."

Looking at the matter from this standpoint, we are persuaded to abandon the contest and turn our attention to the remaining etiological factor—predisposition—to determine if it is possible to dissipate its co-operating influence for the production of phthisis, or so to modify its power where the disease already exists, as to render the local conditions unfavorable to bacillus cultivation.

Koch's discovery of the tubercle-bacillus, in 1882, made an era in medical science. It proved the presence of this pathogenic organism in the sputa of consumptives, thereby giving us a valuable diagnostic sign, and at the same time pointed out the true etiological and pathological relation the parasite bears to pulmonary phthisis; and yet it remains to be shown that this important discovery has lessened the prevalence of the disease, lowered its mortality, or improved our ability to cope with it; and it is an open question to my mind if Koch's discovery has not operated, for a time at least, in a direction contrary to the best interests of the phthisical by securing for the one etiological agent—we cannot overcome so much attention as to lead almost to the forgetfulness of the other—predisposition, which clinical experience has shown to be amenable in a great measure to proper management.

Dr. I. H. Platt,³ writing on this subject, says: "I do not doubt the value of the light thrown upon the etiology and pathology of disease by bacteriology, but what I deprecate is the tendency to neglect as valueless the results of the painstaking investigations of years, because a new etiological factor is found which it is immediately assumed accounts for everything." Even Koch⁴ was compelled to admit that "certain pathological changes are, if not necessary, at least highly favorable to the reception of the germ;" and states in his consideration of the subject of predisposition, that "Although a good many of the phenomena classed under the head of 'predisposition' may be referred to simple and easily-explained conditions, some facts remain difficult or impossible to interpret, compelling us for the present to accept the view of a varying liability." He speaks of the "undeniable predisposition to tuberculosis that exists in some families," and of a tendency to catarrhal affections of the air-passages and imperfect development of the thorax as constituting predisposition.

Speaking of varying liability, he says: "Individual cases of the disease have often shown that a person is not at all times an equally favorable subject for the development of the parasites: for it not in-

³ Brooklyn Medical Journal, October, 1888.

⁴ Investigations of Pathogenic Organisms.

frequently happens that tubercular-foci, which had reached a fair size, contract, cicatrize, and heal up."

James,⁵ considering phthisis from the family-history point of view, divides the affection into three varieties: hereditary, innate, and acquired. By *hereditary* phthisis he means cases in which one or both of the parents have suffered from this disease; by *innate*, cases in which some such affection as struma, syphilis, diabetes, cancer or rheumatism has shown itself among the progenitors; and by *acquired*, cases in which complete freedom from all these conditions had existed among them.

According to Rokitansky, the phthisical tendency was associated with a small heart, small vessels, and bulky lungs.

Rhinfleisch⁶ believed tuberculosis in man to depend upon scrofula, which he considered to be due to "a disproportion, during the development of the individual, between the volume of blood and the weight of the body. Even in the local affections of scrofulous persons there is always a disproportion between the inflamed parenchyma and the absence of the proper congestion of the vessels."

Beneke⁷ states that "the results of measurements in a large number of this class of individuals show a relatively small heart, narrow arterial blood-vessels, large lungs, small liver, and short intestines, and they are small-boned and lean, and have a tendency to osteomyelitis, scrofulous phthisis, and anæmia."

Attention is called to the fact that the authorities just quoted agree that: the association of large lungs with deficient blood-supply constitutes a predisposition to phthisis.

When pathological changes, characterized by purulent infiltration or localized collections of pus, occur, even in organs other than the lungs in strumous subjects, they are very prone to lead to pulmonary as well as to general tuberculosis. Chronic catarrhal affections of the air-passages, which these subjects develop on slight provocation, particularly in cold, damp climates, conjoined with frequent oscillations of temperature, if not properly cared for, extend to the apices and give rise to a formation of plugs in the bronchioles; these in turn lead to a retention of pathological products, and thus provide a nutrient pabulum for the development of tubercle-bacilli.

So-called cases of "catarrhal phthisis" are developed, as a rule, under the influence of constitutional predisposition, morbid pneumonic processes in erethitic subjects, assume a chronic character and

⁵ Pulmonary Phthisis, p. 90.

⁶ Rhinfleisch, in Ziemssen's Cyclopædia.

⁷ Constitution und Constitutionelles Kranksein des Menschen.

eventually become engrafted with tubercle through the instrumentality of the bacillus; and there are many other conditions, such as: protracted sickness, an imperfectly developed chest, the post-parturient state in feeble women, bad hygiene, unsanitary environment, dusty occupations, vicious habits, etc., that may individually, in combination with one another or in association with scrofula, be potential for the establishment of predisposition for pulmonary tuberculosis.

It is not possible in a short paper like this to consider properly the means at our disposal for the control of the various phenomena that constitute "predisposition;" however, there is one factor of such vital importance as to demand our immediate and serious attention. I refer to the exceedingly common practice of superficial and unphysiological respiration that obtains, particularly among the inhabitants of large cities, where the people are surrounded by every influence, "the conveniences of life," calculated to minimize muscular effort. Contracted and inelastic chests, with diminished lung power, are certain to result from this style of breathing if persisted in, particularly in young subjects; to be followed sooner or later by diminished constitutional vigor, imperfect circulation, nutrition, assimilation and innervation. A contracted chest is generally conceded to constitute a strong predisposition to pulmonary phthisis.

Espina y Capo,⁸ of Madrid, states: that when the circumference of the thorax at the level of the axilla is less than 27 inches, that at the xiphoid cartilage not more than 31 inches, and the distance between the two but 7 inches, the probability of pulmonary tuberculosis is very great.

During the last few years I have measured the chests of several hundred persons, and while it is true that a majority of them were affected with diseases of the respiratory organs, many were in health. The European standard of measurement was adopted, and excepting marked cases of emphysema co-existent with asthma, these chests were found in almost every instance to be smaller than normal. I feel quite positive that if the chests of all children over fourteen years of age who attend the various schools of this city are carefully measured, the importance of providing them with proper pulmonary gymnastic exercises will be apparent.

It is not at all uncommon to find children at school laboring under great mental tension to acquire information that will be of no practical value to them in after-life, who are afflicted with anæmia, struma, contracted chests, disordered vision or broken-down nervous systems; and they will continue to be found so long as parents continue to believe

⁸ Trans. of the Congress for the study of Tuberculosis, Paris, July 25th to 31st, 1888.

their children to be precocious, and strive to make them prodigies of learning.

Gæthgens,⁹ considering the prophylactic value of pulmonary gymnastics, says: "A thorough ventilation of the lungs, more especially of their apices, requires a certain muscular strength, as well as an erect carriage of the body. Even in persons with a normally-built chest an habitual defective respiratory action is followed in the course of time by a permanent pulmonary weakness and a decrease in the capacity of resistance towards any pathogenic principles finding their way into the lung. In subjects with an hereditary phthisic predisposition—that is, in subjects with a poorly-made chest, flabby muscles and lowered power of resistance, the dangers of a defective respiration are still by far greater. In addition, in either of the categories the dangers are not limited to a train of pulmonary diseases, but also include various anæmic or chlorotic disturbances, as well as nervous affections. Hence, the pulmonary gymnastics are of a paramount practical importance, *and should be systematically resorted to in all children,*"¹⁰ and that at a possibly early age. . . . Once the habit of thoroughly ventilating the lungs has been firmly established, the child unconsciously or instinctively retains it for life."

It is a matter of popular belief that large lung capacity is a guarantee of immunity from pulmonary phthisis. Such, however, is not the case; as a matter of fact, it is more difficult to keep large lungs in good order than small ones. Persons of sedentary habits, if they have large lungs, seldom find occasion to expand them thoroughly; as a rule, they use those portions that require the least respiratory effort, and it is not a mere coincidence that these are the very parts that are the last to become affected when phthisis occurs. While on the other hand, the apex, which is the most difficult to expand, is the first to develop the disease. Furthermore, we must not forget that functional inactivity of lung-tissue favors a lessening of its own blood supply and nutrition.

James,¹¹ speaking of stature in connection with pulmonary phthisis, says: "That as tall individuals have a distinctly greater respiratory capacity than short ones, any conditions which render life sedentary must in them produce in a special degree lessening of the respiratory functional activity. Inasmuch, however, as a lessened respiratory functional activity is a fruitful cause of that defective state of nutrition which disposes to phthisis, this means in the tall a greater liability to that disease."

⁹ Proceedings of the Riga German Medical Society, 1889, p. 547.

¹⁰ The italics are mine.—G. A. E.

¹¹ Pulmonary Phthisis.

The best remedy for deficient respiratory power is, undoubtedly, a continuous out-door life, combined with active exercise. Ordinary gymnastic exercises are in the main of little service. Systematic voluntary deep breathing, the inhalation of compressed air, as given by the Waldenburg apparatus, pneumatic differentiation according to the method of Hanke, such as may be secured by means of the Williams cabinet, inhalations of compressed air in combination with a local stimulating antiseptic spray, and, finally, systematic passive respiratory movements to be described, are all valuable means at our disposal, and are enumerated here according to my appreciation of their merit. Systematic voluntary deep breathing yielding the least, and systematic, passive respiratory movements the greatest and most satisfactory results.

Dr. Henry Ling Taylor,¹² in a paper concerning the therapeutic value of systematic passive respiratory movements, calls attention to: "that large class of both rich and poor in our great cities, whom a fashionable, sedentary, or otherwise one-sided life had physically degraded," and describes them as a spindling or flabby physical type, of diminished fertility, bringing forth asymmetrical offspring, endowed with contracted chests and diminished respiratory power. Concerning the remedy for this class of cases, he says: "Gymnastic exercises, as ordinarily prescribed, were far from satisfactory as a means of attaining this special object. They were not adapted to the weak and feeble, and while the pulse and respiration were accelerated the lungs were not apt to be expanded; in order to push, pull, or lift with the arms, the breath was held to immobilize the thorax and give a fixed point from which the shoulder muscles might work. The increase of chest measurement realized was frequently due mainly to muscular development. . . . Judiciously used, gymnastic exercise *might* cause increase of breathing capacity by increase of demand for air; but, as a fact, the results showed that a scientific discretion in the use of clubs, dumb-bells, and pulley-weights was not easily taught to the majority of patients, and gymnastics was out of the question with the very feeble. . . . Voluntary deep and measured breathing could, no doubt, do much; but the irksomeness and the fatigue produced were a serious practical drawback. There was evidently a need for a method by which the chest could be expanded freely and regularly for considerable periods without fatigue—a means of automatically stimulating this automatic function."

Dr. Taylor describes the Ling system as used by his father in 1856, in which "the operator stood behind the patient on the bench upon

¹² New York Academy of Medicine, March 19, 1889. *Loc. cit.*, N. Y. Medical Journal, April 20, 1889.

which the latter was seated and lifted the shoulders (with both hands placed under the axilla) at the same time that the patient's back was arched backward and supported against the operator's knee. In another movement the operator, standing as before, grasped the patient's hands and pulled the arms upward and backward against his resistance, after which the patient pulled down the hands of the operator until they lay in front of the chest." Since that time," he goes on to say, "a graduated mechanical resistance had been substituted for that made by the operator, and about seventeen years ago an apparatus had been devised by which the most important of the passive movements was given by steam power, and with far greater efficacy than by the old hand method."

The patient had only to lie on a couch, which threw his body into the most favorable posture, and grasp the handles of the levers of the machine, and inspiration and expiration would be produced at the rate and with the force which might be thought needful. This was continued for from ten to thirty minutes. The immediate effects had been found to be a slight increase of body temperature, an improvement in the circulation, often to the point of drowsiness, a sense of fulness in the chest, and a feeling of invigoration or relief from weariness. After a course of treatment the color and circulation were usually permanently improved, the appetite and digestion were restored to the normal, the weight of thin patients as a rule was increased, and the sleep and nervous co-ordination of 'nervous' patients were improved. The chest expansion was usually increased, but the effects of a course of treatment on the circulation and as a general or special tonic were more noteworthy. This increased expansion was usually obtained in two or three months, and much of it remained even if the treatment thereafter was very discontinuous.

"Gratifying results had been obtained in patients suffering from a flat, narrow, weak, or inelastic chest, from a phthisical predisposition and from old pleuritic adhesions. Notable successes had been obtained in treating functional neurotics in this way; also delicate and overworked persons, especially women of flabby fibre and feeble respiratory power, the victims of backache, headache, neuralgia, dyspepsia, hysteria, neurasthenia, and uterine disorders."

I have quoted Dr. Taylor's paper to a considerable extent, because his experience with this method of treatment is so much more extensive than my own, and because the apparatus I wish to bring to your notice to-night is a modification of the one he describes as having yielded such gratifying results in his hands. In the discussion that followed the paper alluded to, Dr. A. B. Judson stated: "he had once seen an apt illustration in the dissecting-room of the effects of suspension by

the arms. A cadaver had been drawn up through a shaft by a rope fastened to the hands. The lungs being thus extremely inflated, a long-drawn sigh had been heard as the body was laid supine on the floor." He also referred to the fact to which Dr. H. G. Davis called attention in the "*American Medical Monthly*," in 1856 and 1858, that the pectoral muscles made a connection between the humeri and the anterior surface of the chest, and that when the arms and the anterior ends of the long ribs were fixed by the hands grasping a bar overhead, the posterior ends of the ribs were drawn down by the weight of the lower part of the body, thus directly and forcibly expanding the chest.

Frequent illustrations of this are seen in the action of patients suffering from dyspnoea, due to various causes, in the action of resting the hands and forearms on the back of a chair to lessen the effort required in breathing.

My own limited experience in the use of systematic passive respiratory movements for the relief of those conditions for which it has been recommended, corroborates, so far as it goes, that of Dr. Taylor.

In cases of phthisis, however, with pronounced consolidation at one apex, I depend upon inhalations of compressed air associated with a local stimulating and antiseptic spray (such as phenol or creasote), using at the same time a clamp to compress the chest on the sound side sufficient to embarrass its respiratory movements, in order to secure a greater expansion of the affected lung; for, as we know, consolidated lung has greater tensile strength and less elastic energy than normal lung, and, whenever a power such as is exerted by a column of air is applied equally to both, the consolidated portion may be but slightly stretched, while the normal lung becomes abnormally expanded. This is in accordance with the law that energy produces its greatest effect at the point of least resistance. The term "compensatory emphysema," denotes a condition that is associated with consolidated lung, and it comprehends the phenomenon to which I allude.

Compressed air expands the lungs, and chest-enlargement is in a measure, secondary. Systematic passive respiratory movements enlarge the chest, and lung-expansion follows. When the lungs are at fault, the former should be used; when the chest is contracted, the latter is indicated.

As pulmonary phthisis progresses, mechanical influences should gradually give way to local medication. As the disease subsides, the former should be increased and the latter lessened.

DISCUSSION.

Dr. Fox.—I do not believe that we pay enough attention to lung calisthenics. I have seen very good results from the use of the pneu-

matic cabinet in persons predisposed to phthisis. I remember a young man who tried to get a life-insurance policy for \$10,000, but was unable to do so on account of a narrow chest and deficient expansion. By the use of the cabinet he succeeded in increasing the expansion of his chest two or three inches, and was afterwards accepted by the company that had previously rejected him. I have a number of patients phthisically inclined, who come to me to have their lungs systematically expanded. I find the treatment very beneficial, and in the various forms of lung trouble the results that I have been able to obtain have been very gratifying. The method of using the cabinet is more or less familiar to all, being used in this city and New York and also in Boston and other cities.

Dr. MOSHER.—The hour is too late to take up the subject further, but I wish to thank the reader of the paper, and think that we should show our appreciation by doing more in the way of developing the chests of our patients, especially the young girls who come under our care.

Dr. MADDREN.—I wish to thank Dr. Evans for the instruction he has given us on this subject, and to ask if measurements of the breathing capacity of the cases treated, demonstrate the amount of benefit they received?

Dr. EVANS.—Outside of merely measuring the chest it would be rather a difficult thing to do. Spirometry does not suffice; but the young man, who has just manipulated the chair, shows a gain in the expansion of his chest of one inch during the operation. Dr. Taylor says: "That in the course of two or three months of treatment, a permanent enlargement of the chest may be brought about, also that continual deep breathing will produce permanent enlargement of the chest. By other means I have secured an enlargement up to three inches. This young man's chest measures, on forced voluntary deep inspiration, 34 inches; but while he is in the position of extreme inspiration in the chair, his chest measures nearly 35½ inches. This statement may be verified now by any member who may desire it.

This is merely a temporary enlargement of the chest, it is true; but continued treatment, however, will make it permanent.

In relation to the curability of consumption, to which pessimistic reference has just been made, I would like to say, that men like Dr. W. H. Thompson, of New York, have reported cases getting well under the use of creasote. Cornet, of Berlin, has also reported good results following its use. Herman Weber and C. T. Williams, of London, and many others have reported cases of recovery from pulmonary consumption. The statement has been made that 25 per cent. of all persons over 60 years of age have had consumption from which they

have recovered spontaneously. Dr. H. P. Loomis has stated that in the post-mortems he has made at Bellevue Hospital, of those dying from diseases other than of the lungs, he has found evidence in 60 per cent. of them of tubercular processes that had healed, and these cases were from the lowest class of the community; and it is fair to assume they healed spontaneously. Dr. James H. Bennett reports, that in the lungs of many women in the dead-room of the Salpêtrière, he found evidences which proved that they had been consumptive at an antecedent period of their life, but had died of other disease. And many other instances could be cited. That consumption is curable is the sentiment that prevails in all discussions of the subject in medical societies generally.

CAUSES AND PREVENTION OF INFANT MORTALITY.

BY JEROME WALKER, M.D., BROOKLYN.

Read before the American Public Health Association, at its Brooklyn Meeting, 1890.

It is believed by many that the ratio of infants' deaths to the whole number of deaths in any community is a test of the healthfulness of that community. It has been repeatedly said that the public administration of sanitary measures in any city or town can be judged as to its efficiency by the rate of infant mortality in the city or town in question, and that a decrease in the mortality of infants means more efficient health authorities than hitherto. When I agreed to read a paper before this Association it seemed an easy matter to show that infant mortality has decreased of late years in this country, owing to an increased efficiency of health boards and other sanitary associations; but a study of statistics does not show either that the mortality has decreased in the country at large or that the efficiency of health boards in general has increased sufficiently to be a strong factor in effecting a decrease. Notwithstanding these conclusions, the prevalent high death-rate of infants—*i. e.*, of children during the period of the first dentition—is not a reflection upon sanitary science; for wherever the science and art of preserving health has had a fair chance, infant mortality has been reduced. We may agree with Dr. H. B. Baker, of Michigan—who says: “I have no hesitation in subscribing to the belief that much of the infant mortality could be prevented by thorough and enlightened action by local boards of health in cities and villages”—but we all know that this sort of action will not be taken until by civil service, or

otherwise, men best qualified for positions on such boards get them, and will give that personal attention to sanitary details that the mere political doctor will not do. Sanitary science will not have a fair chance until personal attention of qualified persons to sanitary details can be had; and this cannot be, in some cities, with the meagre appropriations made for the execution of health laws. The outlay for proper sanitary work seems enormous to the tax-payer, but a proportionate result justifies the expenditure. In my opinion, the rapid advance that will be made within the next ten years in sanitation, and the training that the people will undergo, will materially lessen infant mortality. **As an evidence of this are the following facts:**

In Brooklyn, in 1878, the population was 531,100. There were 11,075 deaths from all causes. Of these deaths 5,294 were among children under five years of age, and 2,943 of children under one year. In 1884 the population was 644,526: total number of deaths, 14,116. Of children under five years of age, 6,271; under one year, 3,924. In 1888 the population was 794,682: total number of deaths, 18,061. Of these 4,944 were among children under one year of age, and 3,075 of children between one year and five years.

Mere statistics, in regard to the relative rate of infant mortality, are misleading; for an epidemic of diphtheria, whooping-cough or scarlet fever, a very hot summer or a chilly springtime, may increase the mortality out of all proportion, and still health boards cannot be held responsible. We must look, in the main, to parents, guardians, the general medical practitioner, for better results.

Infancy under the best circumstances is a period characterized by great tenderness and almost frailty, of rapid growth, commencing development, and of extreme susceptibility to impressions from within and without the body. In this age of thought, struggle, worry, insomnia, nervous hyperæsthesia, and nerve-tire, babies participate to too great an extent. The baby born of nervous, excitable parents has to contend at great odds with its environments. If so-called civilization did not bring new factors in disease into the field as the population and wealth increase, sanitary science by this time might have reduced in our cities the death-rate of infants under one year of age from one-fourth of all the deaths to about one-eighth or one-tenth, or of children under five years of age from one-half to one-fourth. As improved methods of preventing disease have appeared, new disease-producing agencies have contested the ground inch by inch; so that the hope of the future resides in the sanitary education of the masses.

Some one has said eternal vigilance is no less necessary for the maintenance of liberty than for the maintenance of the health of children. To rear a child nowadays, so that it shall have a healthy

mind in a healthy body, is more difficult, probably, than it was fifty years ago. As wealth increases, poverty increases, and the susceptible baby suffers. Worry, anxiety, insufficient food, over-feeding, insufficient sleep, coddling, exposure—all bring with them dangers to health.

Among the causes of sickness which seem to be growing stronger are: the over-heating of houses, frequently with air deprived of moisture and laden with gaseous impurities from contact with cracked and over-heated furnace-pots; over-feeding with prepared baby foods, sweet crackers, and dainties; the relegation of the care of children to nurses, many of them tricky and incompetent; an increased susceptibility to nervous complications and disorders; and artificial feeding instead of natural nursing by the mother.

“Why,” asked the late Prof. Charles Buckingham,¹ “do American-born females make such poor wet-nurses compared with the immigrant from Ireland or Germany? After nearly thirty years of practice I cannot answer the question. That it is a fact, few practitioners in our large towns and cities doubt. . . . The consequence of the early failure of the supply of breast-milk is the early attempt to fit the stomach for other food. Add to this the parental pride which interferes for the poor pleasure of seeing a toothless child swallow the food of an adult, and you have, for the result, cholera infantum, dysentery, convulsions, tabes mesenterica, and if, by reason of extra strength, the child passes the first dentition, it is more likely to be cut off during the second, or to become later a dyspeptic or even phthisical. . . . The fact has become more and more apparent that large numbers of women cannot nurse their children, and those who are beginning to constitute the exception. Formerly this inability was not so common, occurred only occasionally, and when partial did not attract attention.”

Take this true statement of Dr. Buckingham in connection with the following extracts from the writings of Drs. Nathan Allen and Elisha Harris, together with the fact that a considerable number of physicians nowadays advocate, for various reasons, artificial feeding in preference to natural nursing, and we have an important factor in the increase of infant mortality, and one which boards of health cannot well reach.

“The type of a good nurse,” says Dr. Allen,² “is a woman with a sound and healthy body evenly balanced in all its parts. There should not be a disproportionate development in any of the organs or systems of the body. Heredity and the mode of living of the average woman

¹ Annual Discourse before the Massachusetts Medical Society, June, 1873.

² American Journal of Obstetrics and Diseases of Children, April, 1876.

produce an excess or deficiency in nervous or muscular force and an undue development of the lymphatic organs. Among the causes are educational pressure, constant excitement, depression of spirits, too much society, hard work, great exhaustion, etc."

In 1874 Dr. Harris wrote to a special committee of the Board of Supervisors of Kings County as follows:

"The three great private charities in New York city that receive newly born infants and also provide to some extent lying-in wards admit in the course of the year about 1,900 newly born infants. The rate of mortality in the groups of infants whose mothers (however poor or however young) tarry to nurse their offspring has been, during the past four years, just about fourteen per cent., while in the hired wet-nurse class the rate of death averages about twenty-seven per cent., and in the strictly foundling and orphan class that are bottle-fed or spoon-fed the rate is seventy per cent. dead in the first year and ninety per cent. before the end of two years."

The causes in general of infant mortality are: 1st. Hereditary, viz., syphilis, scrofula, tuberculosis, excessive nervous irritability, etc. 2d. Those due to the child's environments, too little or too much care, exposure or over-protection, insufficient or too much food. These causes result in dyspeptic ailments, intestinal disorders, contagious diseases, marasmus, convulsions, capillary bronchitis, pneumonia, etc. While "general debility" is not considered as a separate and distinct affection, the term is a convenient one to use to designate that condition which follows (especially in our cities) many cases of intestinal disease, whooping-cough, measles, scarlet fever, and diphtheria, or that is in the child at birth. Muscular and nervous debility are too frequently associated with the ailments of children nowadays. This being so, there is more need of recuperation in the summer than heretofore.

Owing to the increasing number of physicians who are carefully studying children and their ailments, to the better stand pediatrics is assuming in connection with our medical colleges, and to popular information as to the care of children furnished by reliable journals, we trust that in the future flabby muscles and uncertain nerves will be rare among children.

But this time can be reached only by a better sanitary education of families, by more clearly outlining and insisting upon the power of health boards being exerted as sanitary science has a right to expect it to be, and by the proper conduction of institutions for children: for the children's welfare, and not the glorification of the trustees.

Parents in general are better acquainted with sanitary measures than was the case even fifteen years ago; but there is much that is published

in newspapers and magazines, under the head of hygiene, that is unreliable and productive of harm. Such statements might well be contradicted by committees on hygiene of county medical societies. Reliable information should be furnished in *all* schools by competent physicians, and much of what is there taught will be repeated by the pupils to their parents, and so the good seed will grow and develop. I have lectured long enough in the public schools of Brooklyn to recognize the advantages of plain, earnest, interesting talks on health topics. When, like most teachers, I had been despondent of good results, I have been called to attend professionally the sick babies of former pupils, and have been surprised to find how readily and intelligently the young mothers appreciated directions. "Yes," they would say, "we understand how important these things are; you used to tell about them in your lectures."

Health primers and treatises of any considerable size do not find their way into most homes. Cities might to advantage spend considerable money to enable boards of health or sanitary associations to gratuitously distribute, where most needed, sanitary tracts. Those designed several years ago by the New York City Board of Health, upon "the care of babies in hot weather," were, to my knowledge, treasured in many a house. Directions as to disinfection might well be given by physicians to families needing them. Health-inspectors, if the right sort of men, can do much by personal information.

Inspector F. H. Colton, of the Brooklyn Board of Health in 1876, puts this in a forcible way: "Disease and death are born of the ignorance and sloth which find a familiar home in tenement-houses. It is the young life, especially, which they attack, and hecatombs of dead babies, in summer and winter, testify with what fatal effect. How to correct the modes of living among the ignorant poor is a problem demanding the wisest thought of the wisest minds, because this would be to reach the roots of the fearful mortality among them. Tenement-house laws and health ordinances have their place, and should be enforced, but these only reach the border-land, as it were, of the difficulty. Within the apartments where the family life goes on is where the laws of health are really broken. It is here, I conceive, that a health officer finds his most important function. It is his, by repeated visitation, by wise suggestion, by personal influence, by creating the conviction that he is a friend, so his coming will be welcomed and his advice heeded—by all these, and any other means at command—to reach, impress, and control the minds of the ignorant masses."

Parents can be taught how to sterilize milk; why and how litmus-paper should be used as a test for acidity of milk; the value of cereal foods, how they should be cooked and how made palatable; the evils

of an excessive use of sweet crackers—animal crackers especially; how the frequent use of head-to-foot ablutions (as Mr. Edwin Chadwick calls these baths) aid in the maintenance of health and the prevention of sickness; how bed-rooms and living-rooms can be easily ventilated; why garbage and excrement should not remain in and about the house to offend the senses of sight and smell and to poison the atmosphere; why food should not be kept in bed-rooms or bath-rooms and near water-closets; why diapers and underclothing soiled with urine should not be dried by the fire in the living-room; what is the use of vaccination; how proper preparation and cooking will render certain cheap, coarse, and tasteless foods nutritious and palatable. Some families might ignore or repel these and other practical suggestions, but many would welcome them.

Boards of health can and should see to it that the drinking-water is ample and good; that milk is at least quite pure, and not furnished by cows fed on sour garbage or distillery-slops and kept in unhealthful stables; that house-garbage is promptly removed; that plumbing is as it should be; that the sewers are properly flushed and disinfected; that contagious diseases are studied, and their spread prevented as far as possible by isolation and notification to the people; that houses are not overcrowded; and that every facility is afforded for the building of model tenements. The hard-working, conscientious health officer has a wonderful opportunity to save life and increase the comfort and usefulness of the people.

If the whole of parentage does not consist merely in loving one's child, but in good blood or heredity, proper food, intelligent care, and untiring devotion, the more frequently we can use these factors in the management of institutions for children the better, and the smaller will be the mortality. But what do we find in too many institutions? We may say of some of them, as Florence Nightingale did in 1863 of hospitals: "Strange though it seems, it is yet quite necessary to lay down the principle that the very first requirement in a hospital is that it should do the sick no harm." There is overcrowding, partly because of a desire to outrival in numbers similar institutions, partly because of insufficient means to extend accommodations, and too frequently because of a niggardly economy, which prohibits a proper supply of food, the employment of intelligent and faithful attendants, and the expenditure of sufficient money to provide proper ventilating and bathing facilities. Though many of the inmates of these institutions come from the lower walks of life, and may not have had the best of care at their homes, there is no excuse for cutting off a necessary supply of milk—the most valuable food of childhood—because it is argued that the expense of running the institution must be lessened; neither is it right to have the

floors wet or damp a large part of the time in the attempt to have them clean. On no ground other than selfishness can the practice be defended of sending children, who are expected to die, out of an institution, so that the published death-rate of the institution shall be small. Such action does not prevent death, but often accelerates it. For what, pray, are institutions for children established unless to care for the feeble, sick, and dying, as well as for those in health, and to give decent burials if necessary?

Careless and prolonged bathing of puny infants in cool or damp rooms is responsible for many a death from capillary bronchitis. Hard and uncomfortable beds, often teeming with vermin; a scarcity of towels and handkerchiefs; the placing of children with gastro-enteric affections, it may be, in the same room with babies having purulent ophthalmia; the insistence upon one woman wet-nursing two infants, or having charge of fifteen or twenty little children, a job sufficient to tax the energies of three or four women; the persistent and often underhand opposition to the directions of qualified and fair-minded medical attendants, whose sole aim is to diminish, by every means possible, a high rate of infant mortality,—all of these things are hindrances to the maintenance of health.

The bane of too many institutions is too many trustees, and there is a clashing of directions. For example: In one institution a lady director ordered the superintendent to give but little butter to the inmates. A few days afterward another director ordered that the butter be given in larger amount. Some of the trustees are men and women who either have sought the position or allowed themselves to be elected for the sake of notoriety or to while away time which hangs heavily on their hands. Generally these people know little about children, and careless. Under their rule the visiting or house physicians either have too much power given them or their professional opinion is considered of little value. How often have physicians been dismissed or asked to resign because they have ventured, though in a gentlemanly way, to enter protests against measures which they know to be inimical to health. It is safe to say that where physicians to institutions have had a fair chance, infant mortality has been reduced, and whenever they have been hampered by conflict of authority, by unjust limitations, by an unwise economy, the mortality has been increased. In an institution in this city having 118 children under two years of age, *six* only died in one year. This small mortality was due to ample accommodations, good nurses, an intelligent matron, and a just appreciation of and reliance upon the medical staff. So valuable are the services of the physicians considered, that, in addition to the annual stereotyped thanks for their gratuitous services, their services are reckoned in the list of donations as annual gifts of so much money value.

The late Prof. Dunster, in his report of 1870, showed that, owing to no overcrowding, fewer epidemics, and better hygienic conditions, infant mortality at the Infants' Hospital, Randall's Island, had fallen, in 1868, '69, and '70, from 55.06 per cent. to 46.83 per cent., and then to 36.41 per cent. He believes that unpaid labor is very expensive, and deprecates pauper labor in such an institution, for it does not furnish the "unremitting, judicious, and proper care that is needed."

In this connection it is well to state the conclusions of the late Dr. Elisha Harris:³ "The private institutions can save 85 per cent. of mothers' infants and 65 per cent. of hired wet-nurse infants, as those institutions are now managed, and it is possible to do much better. . . . The mortality in children past one and a half years of age ought not to exceed 5 per cent. in those under five years of age, and 3 per cent. of those between five and ten years of age. . . . If in any alms nursery the rate of mortality exceeds 22 per cent. of the infants under a year, 10 per cent. in the infants between one and two years of age, and 6 per cent. in those from two to five years, and over 3 per cent. between five and ten years of age, there is culpable fault somewhere, and such faults are of the kind that make puny children and insure an increase of pauperism and public burdens."

We may conclude, from what is known of institutions for children :

1st. That a large proportion of the deaths in them are preventable.

2d. That the younger the children and the larger the number, the greater the mortality.

3d. That the mortality can be lessened, but the decrease costs money, time, patience, and energy, and, to obtain the best results, the attending and resident physicians should be reliable, should be given control over all medical and sanitary matters, and should be held responsible for the same.

In 1874 Dr. Henry Hartshorne and J. M. Toner proposed summer camps, especially for feeble poor children, as an aid in decreasing the high mortality among young children. It was a question, when the proposition was made, whether mothers would be willing to leave their husbands and homes even in the hope of improving the health of their sick or feeble children. In 1875, acting upon the experience of charitable people in Copenhagen, some good people of Boston started what was known as the "Country Week"—the sending of poor children for a week's outing to farm-houses in Massachusetts. Since 1874 cities,

³ Letter to Investigating Committee of the Board of Supervisors of Kings County, etc., 1874.

societies, churches, newspapers, and individuals have instituted "fresh-air funds," summer resorts, and sea-side homes for poor mothers and their feeble children. Very little trouble has been experienced in inducing mothers to go for a week or two with their children, or to allow children to go by themselves, to the sea-side, the country, or mountains. The husbands, for the most part, have come to see how much is saved in various ways by these trips, and so great is the rush by applicants, that the question now is: How can we reach those who need the change most, and how exclude the others? A real danger faces all these efforts to help the masses: the danger of over-doing. The charitably disposed, the philanthropic, the lovers of children, the emotional, people of wealth and leisure, struggle to have a large sanitarium, the largest, if possible; and many donors, or trustees, or helpers have one or more families in whom they are especially interested, and for whom they are positive the charity was established. Doctors are employed at a small pittance, or are allowed to give their services, to show that medical attendance is furnished when necessary; but "change of air" is popularly believed to be all that is needed. The physician is not looked upon as a sanitarian—his highest function—and sanitary matters are relegated to irresponsible people.

Large sanatoria become unwieldy, and are machines, unable to give the true mother-like care which babies need. Better would it be for the babies if there were more sanatoria and smaller. Properly conducted summer health-resorts must help to lessen infant mortality, though it would be hard to prove this statement by figures. A week's freedom from home cares and work, with pure air, an abundance of food, good sea-bathing, opportunities to ride, etc., frequently brings the milk into the breasts of women who at their homes had insufficient nourishment and could not nurse their children. Mothers are taught the value of digestible, plain, wholesome foods; of regular times for eating; of cleanliness; to discard feeding-bottles with long rubber tubes—"snake"-tubes, as some one has appropriately called them; to appreciate proper airing of rooms; that bathing not only makes a baby sweeter, but healthier.

As I look back over my ten years' experience in connection with a sea-side home for children, I can recall to mind woman after woman who has learned to be neat, clean, orderly, sensible—not all in one season, but after several visits to the sea-side home. Every woman so trained must, by the influence of her example, lessen to a certain extent infant mortality in the circle of her acquaintances.

Any one who has lived in winter in a light, well-ventilated, but well-warmed tent of generous size, or who has camped out in summer in a well-arranged, comfortable, airy tent, must feel that tent-life could be

readily and advantageously used for feeble and puny children of our cities. And this tenting need not be at a considerable distance from a city, but upon suitable lots or lands which are frequently to be found within or near to the city limits. It behooves those acquainted with living in properly-arranged tents to advocate camp-life, and to overcome popular prejudices as to tents, founded sometimes on unpleasant experiences in dilapidated and badly-arranged tents at camp-meetings and other resorts.

Large piers which project into our rivers and bays, portions of our public parks, and anchored vessels in mid-stream might well be utilized as sleeping-places on hot summer nights, when sleep is the principal factor in the recovery of babies that are ill. How much more good could be accomplished by St. John's Guild if its barge had its inmates on the water for several days instead of for one day. What sanatoria the large iron ocean-piers would make!

To my mind one of the most important steps toward lessening infant mortality has been made by Dr. Sarah J. McNutt. In the summer of 1888 she fitted up a house, in a *crowded portion* of New York city, as a *city* summer sanitarium. Of the 108 babies, received *all sick*, 79 were under one year of age. Of this 79, 32 died, 22 of the deaths being in July, August, and September. Dr. McNutt says: "Although that experience covers as yet only one summer, it seems to us to demonstrate that bottle-feeding is not necessarily fatal, even in a hospital, and that a hospital for sick babies need not be a place for the production of autopsies alone." She shows that the *quality* of bottle-feeding has much to do with infant mortality; and that, to obtain the results she did, hygienic measures were of paramount importance. The cost of maintenance of each patient in the Babies' Hospital per week was *four* dollars, a larger amount than most institutions care to acknowledge to the public. Dr. McNutt rightly deprecates the false economy in the management of many institutions for children. "A word," she says, "should be added in regard to the nursing in our hospital. We do not expect a single nurse to take care of a whole wardful of sick babies. The nurses are especially trained in the hospital for this work, with an average of one nurse to every four patients during the day, and one to every eight patients during the night. Further, we do not try to reduce our expenses to the lowest possible cost, but, relying upon the liberality of our patrons, put the patients' welfare ahead of every other consideration."⁴ This care, gentlemen, is what we all would bestow on the sick of our own households. Why not in public and private institutions? The very trustees who begrudge an increase in salary to overworked

⁴ Medical Record, March 2, 1889.

employees will willingly pay any amount to bring their own darlings back to health.

In this age of competition, nervous excitability, and undue excitement and restlessness, many of the babies of the middle classes and of the well-to-do need, in the heat of summer, quiet change of air and scene and frequently medical and sanitary supervision. Tired mothers need all this for their own sakes as well as for their babies, and hotels and boarding-houses cannot supply, and often do not care to supply, these necessities. At the present time it is easier for the poor to have their feeble ones properly cared for at the sea-shore or in the mountains than it is for the well-to-do.

In whatever private sanatoria that are opened, the dangers of overcrowding, insufficient drainage, a meagre or poisonous water-supply, poor cooking, inefficient help, an unhealthful location, may accelerate infant mortality, instead of preventing it.

Dr. Henry Hartshorne gives it as his opinion "that among children born with a normal constitution and under entirely favorable circumstances, the mortality ought to be less than at any other period of life." But how often do we see the "normal constitution" and the "entirely favorable circumstances"? Very seldom. "Line upon line, precept upon precept," an unflagging and judicious sanitary supervision of our children, from their birth until we or they are called hence, will, above all things else, decrease infant mortality to the minimum. On the other hand, injudicious sanitary supervision, the watching of almost every mouthful of food a baby takes, constant anxiety lest the child is going to catch cold, the dread that the blood will be overheated by much exercise, etc., will be likely to worry both parent and child into an untimely grave.

THE TREATMENT OF PSEUDO-MEMBRANOUS LARYNGITIS BY MERCURIAL FUMIGATION.

BY GEORGE E. LAW, M.D.

Read before the Medical Society of the County of Kings, March 18, 1890.

Four years ago Dr. Job Corbin, of this city, mentioned to me his success in the treatment of pseudo-membranous laryngitis by mercurial fumigation. The subject, briefly referred to, made little impression upon my mind at the time, and for two years I continued to treat the cases occurring in my practice as before, and with results which chanced to be exceptionally good, four cases in thirteen having recov-

ered. Still, from the narrowness of escape in the favorable cases and the results of similar treatment in the hands of others, I am confident that even such a record could not be sustained by a larger experience.

My first case in which mercurial fumigation was employed illustrates at once the inadequacy of my former plan of treatment, and the efficiency of the new method. On March 31, 1888, I was called to see Richard M., three and a half years of age. At that time there was diphtheritic membrane on both tonsils. The disease ran a mild course for six days, when there was evident extension to the larynx. One-forty-eighth of a grain of bichloride of mercury was given every two hours, and the oleate of mercury was freely used by inunction. The vapor from slaking lime was faithfully used, and whenever the laryngeal obstruction became alarming, as it did at constantly shortening intervals, turpeth mineral was given as an emetic. Under this treatment the disease rapidly advanced, and thirty hours later it seemed to me that a fatal termination could not be long deferred. Tracheotomy was urged and positively declined. In that desperate extremity I remembered Dr. Corbin's suggestion and acted upon it. The child was placed in an improvised tent, and thirty grains of calomel were burned every half hour for eight hours, I having ordered it repeated as often as the character of the respiration became alarming. The following morning the patient was decidedly better, and the interval was extended to two hours. The following night it was used twice, the next day once, and was not after that required. A good recovery followed.

My second case was first seen January 3, 1889. Reginald W., two years old, had a severe type of pharyngeal diphtheria. On the sixth day laryngitis developed, and calomel fumigation was resorted to, but owing to an unfortunate combination of circumstances it was not thoroughly used. On the following evening stenosis was so alarming that it seemed improbable to me that the child would live through the night. Intubation was performed by Dr. McNaughton, and immediate danger passed. The tube was removed a few days later, and no occasion for its reinsertion occurred. The patient died ten days after intubation, evidently overcome by the diphtheric poison. The disease was asthenic in type, with considerable swelling of the glands, scanty urine, etc., a case in which one would give a guarded prognosis even without laryngeal complication.

Case III. was seen on the evening of August 16, 1889. David W., five years of age, had been croupy for three or four days. There was no false membrane in the pharynx. I prescribed as for catarrhal croup. On the following morning the evident obstruction had so rapidly increased that I did not consider it safe to trust medical treat-

ment, and requested Dr. McNaughton to see the case with me and to come prepared to intubate. His faith in calomel sublimation was decidedly larger at that time than mine, and he advised giving it a trial, promising to respond promptly should it again seem to me best to intubate. During that day the treatment was used every two hours and at longer intervals for two days more, when it was discontinued and was not again required. A few days later all evidence of the disease having disappeared, the house was fumigated with sulphur, and a sister of the boy, who had been removed during his illness, was allowed to return. One week later she developed diphtheria of a mild but unmistakable type. I mention this fact as corroborative of the diagnosis.

Cases IV. and V. were very similar, except in the subsequent development in one of them. One was first seen October 17th, the other October 23d of last year. I was called to both on account of croup of two day's duration, and in both found diphtheric membrane on the tonsils and convincing evidence of its development in the larynx. Both were given an iron and chlorate of potash mixture, and were treated by mercurial fumigation. Both made a good recovery, except that in Case IV. paralysis supervened.

Case VI. was similar to Case III. in its history and result, except that no diphtheria developed in other members of the family.

Cases VII. occurred after I commenced the preparation of this paper, and was therefore watched with special interest.

David P., nineteen months of age, was seen on the afternoon of February 21, 1890. He had been croupy since the preceding evening. There was no deposit in the throat. His temperature was 100° F., and varied from that to 102° during his illness. I prescribed as for catarrhal croup, and requested that I be notified early the following morning if symptoms of croup persisted. As no message came, I did not see the patient until 12 noon. At that time the laryngeal obstruction was worse, but not alarmingly so. That I had to deal with a case of membranous croup seemed to me probable, and preparations were at once made for fumigation. The first treatment was given at 2 P. M., February 22d; at 4 P. M., Dr. Fox saw the patient with me, and by a laryngoscopic examination confirmed my supposition. The treatment was repeated in our presence, with almost instant relief. It was used at six and eight; I saw the patient at nine, and the improvement was so marked that I advised increasing the interval. It was used again at 12.30 A. M.; February 23d, at 4.30; again in my presence at 10; in the afternoon at 4.30; in the evening at 8.30; the following day, February 24th, at 1.30 A. M.; and for the last time at 6.30.

In this case the treatment was repeated eleven times, the last forty

hours after the first. While the voice continued hoarse for two weeks, no alarming symptoms developed, and the child is to-day well.

To summarize: The number of cases treated was seven, with six recoveries; of the six in which a favorable result followed, three had pharyngeal diphtheria; paralysis followed in one of them. In three cases there was no membrane in the pharynx. From one of these, another child apparently contracted diphtheria. In one I can give nothing to verify the diagnosis made. In the third the correctness of diagnosis was proven by a laryngoscopic examination.

Though the method of using mercurial fumigation is simple, it has been misused; and for that reason I venture what may be a superfluous description.

The apparatus consists of a tent, and an alcohol-lamp with arms to support a piece of sheet-iron. A good tent may be quickly constructed in the following manner:

Each post of a child's crib is extended by fastening to it in an upright position a bed-slat. The frame is completed by cross-pieces above. Sheets to cover the frame complete the tent. The child is placed in the crib at one end, the lamp is lighted, the sheet-iron plate is adjusted and heated, and thirty grains of calomel are dropped upon it. The lamp is then placed under cover at the end not occupied by the child. The vapor quickly rises and fills the tent. The usual time of each treatment is ten minutes, but may be varied if circumstances indicate.

The attendants should be cautioned not to inhale the fumes unnecessarily, as mercurial poisoning is quite certain to result. In the patient, however, this effect does not follow.

The temperature and humidity of the room should be as with any other treatment in the same disease. It is well to have the use of two rooms, reserving one to be used only while the treatment is in progress and thoroughly airing it after using.

Usually at first the treatment should be repeated every two hours, increasing the interval as the period of relief extends. If the patient is weak it is well to give a stimulant before treatment.

The prompt relief of stenosis I suppose to be due, partly at least, to the relaxation caused by the treatment, just as we see relief follow an emetic in membranous croup, even if no membrane is expelled. The cure is due doubtless both to the local and to the constitutional action of the drug.

While tracheotomy and intubation have been talked of, written of, and practiced as they deserve, a more important expedient than either in the treatment of the disease in question has been to a large extent overlooked; at least I so conclude from inquiries made of many

physicians, and the fact that the literature of the subject consists, so far as I can learn, of three brief papers; one read before this Society by Dr. Corbin in 1881, another by the same author in the "New York Medical Journal" of March 10, 1888; and one by Dr. McNaughton, read before the Kings County Medical Association and published in "Gaillard's Medical Monthly." In Dr. Corbin's last article he reports thirty cases with twenty-five recoveries.

While mercurial fumigation will not take the place of surgical means, I believe that no physician is justified in performing intubation or tracheotomy in pseudo-membranous laryngitis until fumigation has been tried, nor, that failing, is he justified in allowing a patient to die without surgical attention.

I believe that the final judgment of those who fairly test mercurial fumigation in pseudo-membranous laryngitis will be that to Dr. Corbin belongs the credit for one of the great therapeutic advances.

DISCUSSION.

Dr. CHARLES JEWETT.—Mr. President, I am very glad to have this subject brought before the Society again, for I believe the method of treatment is worthy of a more extended trial than it has yet received. A method which promises better results in so fatal a disease as membranous laryngitis should command our attention. This I believe we have in mercurial fumigation. The value of mercury—calomel—in diphtheritic laryngitis I presume is recognized by most practitioners. It was formerly my practice to give small doses, one-sixth of a grain of calomel at short intervals, in the belief that it tends to relieve the stenosis and perhaps to limit the exudation. Recently fumigation has seemed to me a more effective method of using the mercurial. I have been interested in the treatment by fumigation from the time it was first proposed by Dr. Corbin, and by his kindness have seen a considerable number of his cases. These and others that have fallen under my observation were many of them apparently hopeless, yet the proportion of recoveries has been large as the statistics of Dr. Law have shown.

The question naturally arises, wherein lies the advantage of fumigation over the use of the drug by the stomach? At first I was inclined to think there was no advantage; but experience has convinced me to the contrary. Possibly the gain lies in the fact that fumigation permits a maximum dosage with a minimum of bad effects. Syphilographers have recognized its value in this particular, salivation, diarrhoea and stomach disturbances being less liable to occur than in the internal use of the mercurial. One point in regard to the management of the fumigating process. It is important, I think, that the sublimation

should be rapid. The amount I have used is forty grains and this quantity should be volatilized in about five minutes. In too slow sublimation the fumes escape from the tent nearly as fast as produced and the child does not get a sufficient dose. I have seen good results follow the adoption of this suggestion in cases not doing well under very gradual sublimation. Another important point is the necessity of having a pure drug. It is desirable to use a calomel that has been sublimated and washed to remove certain irritating impurities liable to be contained in the commercial article.

Dr. Fox.—I have been more or less familiar with the subject of treating pseudo-membranous laryngitis by mercurial fumigation for sometime, but I never had an opportunity to witness its practical workings until last February. I saw a case with Dr. Law, and was able to demonstrate the presence of a membrane by the use of the laryngoscope. I was surprised to see the relief afforded by the sublimation of thirty grains of calomel, and in another similar case the result was very gratifying. Both cases were cured. From a limited experience I am inclined to believe that the treatment of pseudo-membranous laryngitis by mercurial fumigation is the best treatment that has yet been devised.

Dr. MADDREN.—Mr. President: I have tried the method of sublimating calomel to some extent. I think, as the gentlemen preceding me have stated, that it is a much-neglected remedy. I believe if it is thoroughly and efficiently done that there will be very few cases requiring intubation or tracheotomy. The success of this treatment depends upon the thoroughness with which it is done. I think the most important point is that the sublimation should take place rapidly. It is better to sublimate thirty or forty grains in a minute, or a minute and a half, than to allow it to occupy ten minutes in consuming the same amount; also that the tent should be kept well closed ten minutes; for if it is opened quickly and often part of the effect is lost, as the general moisture which is present in the room precipitates the fumes.

I understand that our eminent chemist, Dr. Squibb, says there is some bichloride of mercury liberated in this calomel sublimation, and if that is so, probably there is some special germicidal action obtained in that way.

I have never seen more than slight poisonous effects—green stools, etc.—upon children, even when pushing this remedy vigorously. I have had no deaths from membranous laryngitis since I began this mode of treatment, although I expect to have some time; there is a certain proportion of cases where it is used too late. I think it works better in sthenic than asthenic cases.

Dr. GEO. McNAUGHTON —I am very glad that Dr. Law has brought up this subject, because I am certain that the method of treatment of membranous croup by the sublimation of calomel has not been appreciated nor understood by many physicians. I saw one doctor burning the drug from a spoon which was held under the patient's face; of course the result obtained in this particular case was unsatisfactory.

Dr. C. C. Henry, of this city, made a very practical suggestion as to the manner of making a tent, which was to fasten an umbrella at the head of a bed, crib or chair, the umbrella being opened, sheets spread over it, and the ends allowed to reach the floor; this makes a good arrangement for the purpose, and the material used in its construction can be found in most houses. I think the worse case of membranous croup that I have seen get well without operating was treated under such a tent by Dr. Henry. This patient was in such a lamentable condition that it seemed almost useless to do anything, yet to our surprise this child made a slow recovery. I was called to insert a tube in larynx of a child who was suffering from true croup a few weeks ago, but it seemed best to try the sublimation treatment; this patient died during the second fumigation. Was told that the child had a convulsion. It is possible, as Dr. Jewett suggested, that the impure calomel may be the reason of failure in some of the cases.

We should not expect all cases to recover under this or any other method of treatment now known, but I am satisfied that the calomel sublimation is the best means we have to combat the poison of diphtheritic croup. I have thought the heated air might have considerable to do with good effects that are sometimes noticed almost immediately. It is hardly reasonable to suppose that the germicidal effects of the calomel would cause so quick cessation of the dyspnoea.

Last year I reported six cases treated by Dr. Corbin's method with four recoveries. Since that time I have seen quite a number treated in the same manner, the proportion of recoveries being about the same.

I think diphtheria has been much less fatal than usual in this section during the past year.

THE PUBLIC HOSPITALS OF BROOKLYN.

BY LEWIS S. PILCHER, M. D.

A paper read at the Seventeenth National Conference of Charities and Correction, held at Baltimore, May 14 to 21, 1890.

The hospitals of Brooklyn, in their number, size, organization, character, and influence, present peculiarities which are the natural result of the environment in which they have developed. A city

primarily of homes, until within the past decade so provincial that it relied upon its neighbor across the East River for leadership in almost everything, absolutely insular, it has always been difficult for the comfortably housed, moderately well-to-do people, who have formed the great mass of its citizens, to realize that there could be any call for any considerable hospital accommodation in its midst.

Fifty years ago public attention was first sharply called to the need of a hospital by an accident near the City Hall, in which a gentleman from Buffalo had his leg broken. There was no place to which he could be carried for care and treatment, except the Almshouse, four miles distant. Two citizens, who witnessed the accident, had the stranger carried to a private house and cared for at their own expense. Active efforts were then made by these gentlemen to establish a hospital; but the records of that day state that these efforts "met with apathy and discouragement." At the end of seven years the net result of these efforts was a small frame building, purchased for \$2,600, with a sign upon it reading "Brooklyn City Hospital." Again, as the "chronicler in the History of Brooklyn" records, "repeated and persistent efforts were made to interest the public and secure aid for enlarging these temporary accommodations, but with poor success." The years, however, brought a gradually increasing impetus to this hospital movement: A gift of \$25,000 was received from one man; a yearly subsidy of \$2,000 was voted from the city treasury; smaller gifts gradually accumulated; a fine site was purchased; and finally, April 29, 1852, a hospital building, worthy of the city whose name it bears, having been completed, was opened for the reception of patients. With subsequent enlargements this hospital, well equipped in every essential particular, affords accommodation for 125 patients. For nearly forty years this, the Brooklyn Hospital, has been doing its beneficent work. It is a private benevolent incorporation; it has numbered among its trustees many of the most prominent and wealthy of the citizens of Brooklyn during this period; but these men have died one after another, and, with rare exceptions, have left no bequest to the hospital. An impression has largely prevailed in the public mind that the institution was a part of the public charities of the city, maintained by public funds, so that but few pecuniary gifts or bequests have come to it. The original charter of the Union Ferry Company of Brooklyn gave this hospital a claim upon any surplus that should be found to have accumulated by that company at the expiration of certain privileges; this claim was compromised, some years since, by the payment by the Ferry Company of \$75,000 into the treasury of the hospital. This has been invested as a permanent endowment fund. This, however, can furnish but a small fraction of the money required annually to maintain such a hospital.

The apathy which has prevented the reception by this institution of large bequests from Brooklyn's citizens is strange. The result is that this, the oldest hospital in the city, is still crippled by inadequate resources, and is compelled by its poverty to keep closed about one-half of its beds. Although it has accommodations for 125, only an average of 60 beds were used during the year 1889.

The city of Brooklyn is in the County of Kings, on Long Island. Practically the city and county are identical, for the population of the outlying country towns which are included within the county limits is relatively insignificant. As a part of its almshouse establishment, the county sustains a hospital, which is a large and important institution. The County Buildings, including the hospital, are in the village of Flatbush, about four miles from the Brooklyn City Hall. The earlier history of this hospital I am unable to trace, but I find that as early as the year 1856 it had attained large proportions, the daily average number of patients treated in it during that year was 453. The total number treated during the year was 3,360, and the expenditures for the hospital amounted to \$78,320.02. The population of Brooklyn was then 200,000 souls. In 1889, though the population of the city had quadrupled, the number of patients cared for at this, its only public hospital, had increased but slightly. 514 patients are reported as being in the hospital at the date of the last annual report of its superintendent, July 31, 1889. The expense of maintaining the hospital for the year 1889 was \$62,124.62. The total number treated was 4,552. This is an astonishing exhibit to make when it is remembered that the increase in population must have brought with it an increase in the number of the dependent, the improvident, and the destitute in much greater proportion than that of the actual increase in inhabitants. Other influences, however, have been at work to provide for them, to which attention will shortly be drawn.

The Kings County Hospital is a single large building, built with reference to economy of material, space, and service, answering in no respect the present accepted requirements of hospital construction. It is continually overcrowded. The accumulation of 500 patients under one roof is greatly to be deplored. The larger proportion of the cases that are assembled are of course chronics, such as alcoholics, consumptives, rheumatics, epileptics, paralytics, nephritics, bronchitics, venereals, and ulcers, but there is in addition a large obstetric service; many pneumonias, pleurisies, and fevers are cared for, while diphtheria, scarlet fever, measles, and erysipelas cases are likewise received. The organization of the hospital is quite as archaic as the structure of its building. Under the control of the Commissioners of Charities and Corrections of the county, local political considerations cannot be

ignored in its management. The actual direction of the treatment of the 500 patients is vested in a medical superintendent, who is also the executive chief of the hospital. With him are associated an assistant medical superintendent and five assistant physicians. These assistant physicians are recent medical graduates, and correspond to the house staff or internes of other hospitals. They serve without salary for one year, when they are replaced by new appointees. There is also a consulting staff of physicians and surgeons, who may be called upon as needed.

It has been exceedingly unfortunate, both for the institution itself and for the city which it serves, that this great hospital should have been located at such a distance from the city as to eliminate it almost entirely from the medical world of the city. The result has been to keep it, what it was at first, an appendage of the Almshouse. Only to a limited extent has it supplied any of the hospital needs of the city. It has not enjoyed the advantages of the sympathies or the criticisms of the profession of the city in its work, nor has it contributed to any considerable extent to the enrichment of professional information or experience.

A fairer index as to the extent of Brooklyn's needs for the care of its sick may be found in the records of its County Lunatic Asylum. In this direction no private benevolent organizations have sprung up to divide the public burden, and the whole dark picture of need and misery is drawn in strong lines in the official reports. Here it is: In 1856 the total number of insane patients treated in the Kings County Lunatic Asylum was 330; in 1889 it was 2,525. The number of new patients admitted to the asylum was, in 1856, 145; in 1889, 503. The county has been compelled to increase its accommodations for the insane from time to time. The greatest change has only quite recently been consummated in the erection, upon a tract of land called St. Johnland, some forty-five miles away from the city, of sixteen two-story frame cottages, to which the hopelessly insane are sent. Here additional cottages will be erected as need may require. 718 patients were cared for in these cottages during 1889.

The General Hospital of the county cannot much longer fail to receive attention. Defective in its construction as it is, it is constantly overcrowded; intended to accommodate 400 patients, 500 are much of the time crowded within its walls. At the present moment Brooklyn is somewhat dazed by the conditions that attend its rapid growth. The problems of street-paving, of rapid transit, of market facilities, of bridge-extension, of park management, of police organization, of school-house building, the multiplication of new dwellings, factories, warehouses and wharves, and similar things crowd such matters as hospital con-

struction out of sight. This failure to realize hospital needs is also made more pronounced by the general (but erroneous) impression that this hospital work is being adequately performed by private charitable organizations, which are assisted from the public treasury.

Oppert has estimated the needs of hospital accommodation in cities at four for every thousand of population. The city of London, in 1884, supported seven beds for every thousand. Accepting, however, the smaller proportion, Brooklyn to-day, with its 859,000 of inhabitants, should have 3,436 beds available for those in need of hospital care. As we have seen, the county maintains at the most 500 beds; to this number may be added 1,225 beds in ten other general hospitals, and 175 beds in seven special hospitals, all maintained by private charity, with some public aid, giving a total of only 1,900 hospital beds as the complete number provided for invalids of all classes in the County of Kings, N. Y., including the city of Brooklyn.

GENERAL HOSPITALS.

<i>Names of Institutions.</i>	<i>Number of Beds in each.</i>
Brooklyn Hospital	120
Long Island College Hospital.....	175
St. Catherine's Hospital.....	160
St. Peter's Hospital.....	250
Homœopathic Hospital.....	125
St. John's Hospital.....	85
St. Mary's Hospital.....	200
Lutheran Hospital.....	40
Methodist Episcopal Hospital.....	60
Norwegian Hospital	10
	<hr/>
	1225

SPECIAL HOSPITALS.

<i>Names of Institutions.</i>	<i>Number of Beds in each.</i>
Eastern District Reception Hospital.....	25
Lucretia Mott Dispensary (Women).....	10
Woman's Homœopathic Hospital.....	10
Brooklyn Eye and Ear Hospital	10
Home for Consumptives.....	75
St. Mary's Female Hospital.....	30
Brooklyn Maternity	15
	<hr/>
	175

I do not think that I am too sanguine in indulging a belief that in the very near future a revolution in Brooklyn's public hospital arrange-

ments will be made. The public mind is being educated to the city's needs; the public conscience is being awakened to the city's duty; indications of public spirit, that responds to interests of the city that are higher than those which present simply gross material aspects, are becoming increasingly manifest. It cannot be long before improved means of transit will bring the County Hospital within a few minutes' distance from the business centre of the city, so that its present isolation will no longer exist. Brooklyn will then insist that its great public hospital shall be the equal in its arrangements, appointments, and organization of those of other great cities, and that it shall show professional results commensurate with its size and opportunities.

Lord Randolph Churchill, in a recent speech at a hospital dinner in London, said: "The hospitals of this metropolis and of the great towns of England are a perpetually flowing fountain of medical science, and all great discoveries of medical science, all the new remedies which medical science brings to light for the treatment of disease, and all the ingenious associations of the appliances of mechanism and of instruments take their origin and thrive in the hospitals before they are applied to the treatment of disease outside the hospitals . . . I wonder how many rich people there are in this town who have met with serious illness or accident, and who, by almost miraculous medical skill and almost miraculous patience in medical nursing, have recovered, who never thought to give a single sixpence to the hospital to which they may be said to owe absolutely their prolonged life."

These post-prandial words of the honorable lord are words of truth and soberness. From no investment can a community gain a larger or more certain return than from that which it puts into the support of its hospitals. The hospital cares for the poor, relieves suffering, restores workers to the community just to the extent that the hospital-beds are occupied by patients; but in addition the knowledge that is gained by the physicians who labor in these hospital wards, and by the nurses who are trained there, is continually accumulating as a fund to be drawn upon by every citizen in his greatest extremity. In hospitals only can young men receive the training essential to fit them for becoming the physicians of the people; in hospitals only can that special training be obtained by those older in the profession of medicine which can make them the valued consultants needed in the most important and critical cases. Every community can therefore well afford to deal generously with its hospitals. To hamper their work by doling out the least possible sum that may suffice to accomplish the perfunctory care of the absolutely destitute sick that must be sheltered is the height of folly.

A profound confidence in the good sense and judgment of the

Brooklyn public it is that convinces me that the facts as regards the hospital needs of our city are but to be sufficiently brought to the attention of the people to ensure whatever appropriations may be necessary for putting its hospitals in excellent condition.

Of the ten general hospitals of Brooklyn mentioned, which are not the property of the city, the origin and work of the Brooklyn Hospital has already been noted. The second in order of establishment was the Long Island College Hospital, which, as its name indicates, was established and is maintained for the primary purpose of affording clinical facilities for the instruction of students in medicine. The date of its establishment is 1859. It has now 175 beds, in which were treated 1,906 patients during the year 1889; 17,033 out-patients were also treated in its dispensary department in 1889; 151 medical students attended the courses of instruction in its wards, and 45 pupils were under training in its Training School for Nurses. Its career during the thirty years of its active work has illustrated in a marked manner the reflex value to a community of hospital work in its broadest and best aspects. It has been a stimulus to medical thought and investigation; it has quickened, broadened and elevated the tone of the medical profession of the city; it has trained the men who are the leaders in the medical profession of the city to-day; in its earlier years it called to the city such men as Austin Flint, Frank Hastings Hamilton, Corydon L. Ford, William Warren Greene, Samuel G. Armor, to whom have now succeeded men, trained in its own wards, who are worthy successors of these great men. It has long been the dream of some of Brooklyn's foremost scholars that a foundation for a great university should be established in that city. Slight reflection will show that Brooklyn presents conditions unusually favorable for academic life and university work. It needs but a leader who may be able to grasp and weld together the conditions which are already to his hand, to have this dream realized. Not the least important element in this university of the future has already been elaborated in this College Hospital.

The Roman Catholic Church maintains in Brooklyn three large hospitals: St. Peter's, established in 1864; St. Catherine's, in 1870; and St. Mary's, in 1882. The number of beds furnished by these hospitals aggregates 610, and the number of patients treated in them during 1889 was 4,417.

The Protestant Episcopal Church maintains one hospital, St. John's, with 85 beds, established in 1871.

The supporters of the Homœopathic medical practice also maintain a hospital of 125 beds, which dates its foundation from the year 1871.

An Evangelical Lutheran Hospital of 40 beds, and a Norwegian Hospital of 10 beds, have been established within the last decade.

The most important of the recent additions to the hospitals of Brooklyn is the Methodist Episcopal Hospital, which was opened for patients in December, 1887. This hospital owes its origin to the broad, generous charitable heart and the local public spirit of one man, Mr. Geo. I. Seney, who at a time when he was the fortunate possessor of large business gains, became impressed with the hospital needs of the city of his residence; and determined with some of his gains to build for that city a hospital which would be as perfect in its plan and its appointments as the most recent tenets of hospital construction might dictate. In order that the scientific side of hospital work might be properly blended with and aided by its humanitarian side, his first step was to put the enterprise under the responsible direction of that branch of the Christian church of which he was himself a member, and of which his father had been an honored minister, viz., the Methodist Episcopal Church. The building plans adopted for this hospital were upon a broad and liberal scale, and, as the work progressed, the entire cost was paid by the liberal founder as the bills matured. But a time came when unexpected reverses made it impossible for Mr. Seney to longer continue his benefactions to the institution. At this time a large plot of ground, in a beautiful situation, and three buildings externally complete remained as an evidence of the large plans of the founder. More than \$400,000 had been expended by him in the work up to that time.

When the gifts of the original benefactor were suspended, the work of raising funds for completing the buildings was taken up systematically in the Methodist Episcopal Church. In due time one of the buildings, a two-story pavilion, closely following in its plan and arrangements the Johns Hopkins model, was completed and opened for hospital uses. Sixty beds have thus been made available. The third year is now well advanced since this pavilion was opened; its beds are continually filled; and a strong appeal is now being made to the public for funds to complete and open a second building. The addition of sixty more beds to the hospital accommodations of the city of Brooklyn is, however, by no means the most important of the advantages thus far conferred by this hospital. It is in addition constantly stimulating the growth of higher ideals of hospital construction, work and management in the city.

The special hospitals of the city comprise one Accident Reception Hospital, an Eye and Ear Hospital, one Home for Consumptives, one Maternity Hospital, and three Hospitals for Women, comprising in all 175 beds.

An additional phase of the hospital work of Brooklyn which requires notice at this point is the relief which is afforded to the sick

and injured who do not require to be retained in hospital-beds, that is to say, the dispensary work for ambulant patients. Nearly all of the hospitals maintain such a dispensary service in connection with their in-door work. There are also at least twelve other institutions in which dispensary work is carried on. The total number of ambulant patients treated in the out-door departments of the hospitals and in the dispensaries proper during the year 1889, as officially recorded in the reports made to the Comptroller of the city and in the published reports of the various institutions, aggregates 155,603. The total number of in-door patients treated in the wards of the various hospitals was 9,500. The total amount expended in accomplishing this charitable relief toward 165,103 individuals was \$354,703.74. The total number of days of in-door hospital treatment was 277,965. The average per diem cost of this treatment was about \$1.00. That is to say, \$277,965 were expended for hospital work proper, and \$76,738.74 for dispensary work. The maintenance, therefore, of each of the 9,500 hospital patients amounted to \$29 25, and the expense of relieving each dispensary patient was 49 $\frac{1}{3}$ cents. All this is in addition to the 4,552 patients who were cared for at the County Hospital at an expense of \$62,124.62, or \$13.65 per capita.

Of the total amount of \$354,703.74 which, as above stated, was expended in the city of Brooklyn for the relief of its sick poor, \$127,990.99 was paid out of the city treasury, and the remaining \$226,703.75 measures the amount of the charitable contributions of the citizens plus the interest accrued from endowments and the amounts paid by patients themselves. I have not the data for computing exactly these latter items, but in a general way I think it amounts to about 25 per cent. of the entire cost of the hospital work. Whatever it may be, it is immaterial here, for I desire here more particularly to call attention to what is done by the city officially in the way of contributing to hospital maintenance.

There has grown up in our city a peculiar state of affairs as regards the relations of the public treasury to the hospital work of the city, which has now reached dimensions that call for investigation and reorganization. I find from the records of the county that as far back as October 24, 1840, the Superintendents of the Poor informed the Board of Supervisors that the provisions for the sick at the County Almshouse were inadequate, and that the rooms of the hospital were so overcrowded that they had made arrangements with the managers of the City Hospital (it is to be remembered that this so-called "City" was the private hospital already mentioned as the Brooklyn Hospital) to receive from the County Poorhouse a portion of the sick paupers. This I believe to have been the beginning of the payments from the

public treasury to the private hospitals of the city. A few years later the practice had become an established custom, and the sum of \$2,000 per annum to the "City" Hospital was one of the regular items of the city budget. As new hospitals were established, they presented their claims to recognition from the city treasury in like manner. Finally, special legislation was procured from the Legislature of the State directing that specified sums be paid annually to certain hospitals, the conditions being that these hospitals agreed to care for such sick poor as should be sent to them by the authorities of the city. The amount specified in this law to be paid to the hospitals was in most of them \$4,000. Smaller amounts were specified in one or two instances only. From time to time as new institutions were founded, their promoters caused amendments to this original law to be introduced whereby similar sums were directed to be paid to them, until at the present time there are some thirteen institutions who are legal claimants for annual appropriations from the city in recognition of their work in the care in hospitals of the city's poor. The amount to be paid is fixed arbitrarily and bears no relation to the amount of work done. Yet another feature was in process of time added to this legislation whereby additional grants were made to specified institutions on account of the dispensary work done by them. Fifteen hundred dollars was the regulation stipend fixed for this purpose, and the number of these institutions has gradually increased until it amounts to nineteen. At the last session of the Legislature there were three more applicants for admission to the list, but the bill in their favor, which was passed by the Legislature, was vetoed by the Governor at the request of the Mayor of the city. As regards the institutions that now receive this same stipend, the same criticism as to the lack of any relation between the amount of work done and the amount of money received that was made above in regard to the hospital work is again true, for the records show that an institution which relieves many thousands (L. I. C. H., 17,033; Central Dispensary, 12,366) receives no more than an institution which relieves but a few hundred (Orthopædic Dispensary, 610; St. Catherine's, 580; St. Mary's, 420).

Yet another source of supply from the public treasury remains to be noted, viz., the excise fund. The Common Council of the city is in the habit of annually dividing among the charitable institutions of the city certain moneys which constitute the excise fund, chiefly derived from the amounts paid for licenses to sell liquor. Some \$150,000 is annually distributed, and of this the hospitals and dispensaries get a share each pro rata according to the amount of charitable work done. The highest amount received by any institution from this source in the year 1889 was \$8,845.09, received by St. Catherine's Hospital. From

these various sources a considerable revenue accrues to some institutions, the largest amount received by any one institution in 1889 was St. Catherine's Hospital, which received \$15,545 09. The following is a list of the amounts received by the various hospitals and dispensaries of the city in 1889, as shown by the records of the Comptroller's office :

<i>Name of Hospital or Dispensary.</i>	<i>Amt. received from city.</i>	<i>No. of patients treated:</i>	
		<i>Hospital.</i>	<i>Dispensary.</i>
St. Catherine's	\$15,549 09	2,003	580
Homœopathic	13,513 89	585	9,147
St. Peter's.....	12,849 00	1,354	1,224
St. Mary's.....	12,728 85	1,060	420
Brooklyn	10,628 98	783	610
Long Island College	9,490 77	1,906	17,033
St. Mary's Female.....	7,488 39	412	5,478
Eastern District.....	6,615 00	253	13,000
Methodist Episcopal.....	6,448 74	398	585
Home for Consumptives.....	4,968 09	192	.....
Maternity.....	3,974 67	151	.....
Eye and Ear.....	3,025 45	107	8,982
Woman's (M. A. D. Jones).....	2,987 22	64	1,025
Central Dispensary.....	2,376 55	.....	12,366
Lutheran Hospital.....	2,252 97	98	2
Bushwick and East Brooklyn.....	2,100 25	.....	4,579
Gates Avenue Homœopathic Dispensary.....	1,953 74	.....	6,586
Central Homœopathic Dispensary.....	1,874 09	.....	5,816
Woman's Homœop. Hosp. and Dispensary.....	1,842 56	65	5,639
City Dispensary.....	1,500 00	.....	7,658
Eclectic Dispensary.....	1,500 00	.....	1,713
Atlantic Avenue Dispensary.....	1,500 00	.....	4,019
Eastern District Homœopathic Dispensary.....	1,500 00	.....	11,000
Southern Dispensary.....	1,479 86	.....	6,255
Helping Hand Dispensary.....	1,000 00	.....	672
Bedford Dispensary.....	214 02	.....	1,665
Lucretia Mott Dispensary	123 10	18	316

No description of the hospital work of Brooklyn would be complete without a statement of the ambulance work. Unqualified praise can be given to this work, and it may be held up as a model to be followed by other cities. Under the direction of the Commissioner of Health of the city, the city is divided into five districts, and for each district an ambulance service is provided, at an expense of \$1,200 each annually. Each ambulance is stationed at a general hospital located within its boundaries, which is in communication with Police Headquarters by a special telephone line. Accidents or other conditions demanding medical aid which come to the knowledge of the police are at once telephoned to Police Headquarters, from which the call is sent to the ambulance in whose district the case may be. The appliances for immediate response at the ambulance stables are modeled after that developed by the fire department, and are so perfect that, as a rule,

within two minutes at most after the reception of a call the ambulance, with its surgeon and its supplies for first aid, is en route for the indicated spot. When the ambulance has once reached the individual in whose behalf the call was sent out, the ambulance-surgeon may, according to the needs of the case as he finds it, either give it the immediate attention which is called for and dismiss it, or may take it home if desired, or may take it to the hospital for further care. During the year 1889 the ambulances of Brooklyn responded to 4,983 calls. Some member of the house-staff of the hospital is usually detailed as the surgeon for the ambulance stationed at that hospital.

In contradistinction to this admirable provision made by the city for the relief of sudden accident or distress, must be placed a most serious omission thus far to provide for a much greater need, which has been ignored in great measure simply because it does not obtrude itself on public notice in so startling and dramatic a way as do accidents; I refer to the care of cases of contagious disease, particularly diphtheria and scarlet fever. From all the hospitals of the city such cases are excluded; at the County Hospital they are received, although that hospital has no special means of caring for them. A new hospital for contagious diseases, more particularly small-pox, is just approaching completion, and will afford ample provision for the care of that class of cases, *i.e.* small-pox. This is under the control of the Commissioner of Health of the city, and is located in the town of Flatbush in the immediate neighborhood of the County Hospital. But for diphtheria and scarlet fever patients there is as yet no provision. The extent to which these latter diseases prevail may be estimated from the fact that in the year 1889, 1,118 deaths from diphtheria and 381 more from that form of it called croup took place in the city, and 272 deaths from scarlet fever. The importance to the public welfare of the isolation of cases of these diseases, as well as the advantage to the individual patients in very many instances, needs no elaboration from me here. In order to complete my picture of the hospital work of my city, I simply state these facts to indicate one of its defects. To meet the needs of this class of sufferers, for whose adequate isolation the public is so greatly concerned, it is evident that in a city spread out over so great a territory as is the city of Brooklyn, no one institution could suffice, wherever it might be placed. The wards that are to answer the needs of this class of the sick must be of easy and quick access, and must be in an environment that will command the confidence of the people. It may be that in the ambulance arrangements of the city will be found a suggestion that will be fruitful in the line of what may be done for these contagious diseases, *viz.*: a number of small isolated pavilions within the grounds of already-established hospitals, cared for by the

medical and nursing staff of these hospitals, while the expense of this work is defrayed from the funds of the Department of Health of the city, the head of which should retain a general supervision of the whole.

This must conclude what I may now say about the hospital work of my own city. I have drawn a faithful picture of our hospital conditions. The defects which they present are very great; they are very far short of measuring up to the present needs of our population, but nevertheless the work that is being done is a vast and a creditable one. There is behind none of the hospitals of Brooklyn a long history and venerable traditions; none of them possess large endowments or wealthy patrons. A steady and assured income is the great need of every one of them. In so far as they do public work and bear public burdens they are rightful claimants for public money. In so far as they are the agents of organized beneficence they appeal to the charity of the community. In so far as they return to the community better medical knowledge and skill, and training in the nursing of the sick, they appeal to that most powerful of all instincts in the human heart, that of self-preservation, for adequate support and larger opportunities.

The apathy of any community toward its hospitals must spring only from lack of information or from misapprehension. To supply the one and correct the other has been the object of this communication.

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EDITORIAL.

REFORM IN THE BURIAL OF THE DEAD.

We are glad to see that the subject of funeral reform is engaging the attention of the clergy. A society of clergymen in Topeka, Kansas, has passed resolutions opposing the custom, on the part of pall-bearers and friends, of uncovering the head at the commitment of the body to the grave. The local medical society has unanimously endorsed these resolutions. It would be well if all similar associations would pass resolutions to the same effect.

ASYLUM FOR THE INSANE IN CHINA.

It seems somewhat singular, in view of all that has been done of a missionary nature for the Chinese, that no provision has been made for the care of the insane, and yet such is the fact. To Dr. E. P. Thwing, of Brooklyn, is the credit due of having called the attention of the civilized world to this oversight. The Medical Missionary Society has now taken the matter in hand, and expresses the hope that the establishment of the first asylum for the insane in China will be an international work, as was the founding of the first hospital at Canton half a century ago. In the promotion of this object it respectfully and earnestly solicits the aid and support of the press, foreign and native, and of officials, business men, and missionaries, who in their several positions come in contact with and influence various classes of the people.

THE POPULAR USE OF HARMFUL DRUGS.

In a very instructive paper, published in the *Journal of the American Medical Association*, Dr. I. N. Love discusses the merits of some of the recent antipyretics, and concludes with the following remarks, which we commend to our readers :

"Acetanilide, while of great value and surely safer than antipyrin, is no exception to the rule that obtain with all drugs. It should be handled carefully, administered judiciously, and under no circumstances should the public be educated in its use.

"The time has come for the profession to call a halt and endeavor to check the reckless use of medicines upon the part of the people. The secular press, in disseminating information regarding the action of drugs, gleaned from medical sources, is to a large degree responsible for the drugging habits of the people; but the medical profession is not blameless in the matter, in that many physicians verbally advise the purchase of many drugs by their patients, and carelessly and thoughtlessly impress them with their harmlessness.

"Medicines, which are nothing more than the tools by which the physician hopes to accomplish certain ends, should no more be left in the hands of an uninformed lay public, to use at their pleasure, than should the equipments of a surgeon's office or the accoutrements of a standing army (all intended, if properly used, as a protection to the lives of the citizens) be recklessly placed in the hands of children, or those unskilled in their use.

"If the members of our sister profession of pharmacy do not become imbued with the above thought, and act upon it, physicians may be forced to supply themselves with a part, at least, of the medicines needful to cope with disease, feeling that the attending inconvenience will be more than compensated by a knowledge of the fact that they will have a more definite control over the drugs administered to their patients."

ANTI-VACCINATION IN ENGLAND.

Dr. Charles N. Hewitt, Secretary of the State Board of Health of Minnesota, has just returned from Europe, where he has been investigating the methods of vaccination and the preparation of vaccine virus, in addition to a thorough examination of the preventive treatment for rabies, and the bacteriological methods of the prominent bacteriologists. He informs us that the fight against vaccination is very bitter and formidable, and that it is more than probable that in the near future the battleground will be extended to America.

PROGRESS IN MEDICINE.

SURGERY.

BY GEORGE R. FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

UPON EXTIRPATION OF THE RECTUM, WITH PRELIMINARY OR SIMULTANEOUS COLOTOMY.

N. A. Weljaminow (*Centralblatt f. Chirurgie*, No. 10, 1890). After carefully studying the entire literature of the subject of resection of the rectum for carcinoma, W. draws the following conclusions:

1. Low amputations and resections of the rectum only are to be considered as slightly dangerous operative procedures, furnishing certain and palpable results, not only as regards radical cure, but functionally considered as well.

2. High amputations and resections are to be considered as very dangerous operations, giving, without exception, unfavorable functional results, as well as uncertainty regarding the radical cure.

3. By the combination of the last named with the performance of preliminary colotomy (Schinzinger) good functional results may be obtained (two cases reported by the author), as well as greater certainty of reaching and removing the growth assured.

4. Preliminary or simultaneous colotomy after Schinzinger-Madelung is indicated: *a*, in all amputations above the third sphincter (8 to 9 cm. above the anus, or when the latter itself is involved in the disease, together with more than 7 cm. of the rectum); *b*, in all cases in which the sphincters may possibly be preserved, but in which it would be impossible, dangerous or useless to suture the bowel after removal of the diseased portion; *c*, when the occurrence of a urinary fistula is to be anticipated, or when the removal of the recto-vaginal septum and the accumulation of cloaca seems unavoidable; *d*, finally, when, as a result, considerable narrowing of the rectum is to be found, or a satisfactory emptying and disinfection of the colon is not possible.

UPON THE RESULTS OF TREATMENT OF HYDROCELE.

E. VonWinkel (*Beit. zur Chir. von Bruns, Czerney, Kroenlein u. Socin.*, Bd. 5, Hft. 2). The author reports 90 cases, together with abstracts from the histories of the same; 48 cases were treated by

puncture and the injection of iodine; cure followed on average in from seven to eight days. Of these, 6 cases relapsed, 25 cases were treated by radical operation, the period of recovery averaging twenty-three days; of these but one relapsed. The radical operation, with various modifications, gave equally satisfactory results.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

ANTISEPTIC CURETTING OF THE UTERUS IN PUERPERAL ENDOMETRITIS.

Dr. E. Braun (*Arch. f. Gyn.*, B. xxxvii., H. 3). The author reviews some of the prevailing opinions with reference to the bacteriology of puerperal fever. He believes with Kehrer that three groups of germs are concerned in the etiology of child-bed fever, viz.: pyogenic, septogenic and saprogenic micro-organisms. In other words, he holds that puerperal fever may be pyæmic, septic or sapræmic. The latter or putrid form he thinks the most common.

Charpentier regards septic endometritis as the principal initial form of child-bed fever. After curetting and douching the uterine cavity he mops it with creosote and glycerine.

Of 7,600 puerperal cases at Vienna 101 were curetted, 96 recovering. Of the 5 fatal cases three were considered septic rather than sapræmic.

The Vienna method is as follows: The patient is placed in the Sims position, the external genitals cleansed and the vagina and uterus irrigated with a thymol solution, before and after curetting. A finger thick iodoform pencil is dipped in tincture of iodine and left in the uterus. Vaginal tears and abrasions are touched with tinct. iodin. The cervix and vagina are lightly tamponed with iodoform gauze. The patient is given a dose of cognac and an ice bladder is applied over the abdomen. A vaginal douche of thymol solution is used once daily. The fever subsides in from one to six days. Parametric inflammation had not been observed as a result of the curetting.

Curetting is indicated when a septic condition of the endometrium is announced by fever, faulty involution and fetid lochia. It is useless after the infection has become general.

USE OF CHLOROFORM IN NORMAL LABOR.

Porak (*Arch. d'obstet. et de gyn.*, April, 1890) considers chloroform safe if given with care in small and intermittent doses. Accidents are due to carelessness. Too long-continued use of chloroform and

too large doses may impair the efficiency of the uterine contractions yet the influence of the drug in this particular is often more apparent than real. Serious hæmorrhage after labor he has not observed from the use of the anæsthetic. Yet he considers it prudent to omit chloroform in women subject to hæmorrhage. Furthermore it is his practice to give ergot hypodermically as a prophylactic.

The nervous excitement caused by chloroform in surgical anæsthesia is much less marked and often absent altogether in the lying-in patient.

Unpleasant after-effects such as nausea and depression of spirits are almost never experienced. In neurotic patients with insufficient pains chloroform is a most valuable sedative and often in such cases accelerates the labor. Its effects, however, vary with different patients and with the mode of administration. In general its inconveniences are unimportant in comparison with its advantages. There are no contra-indications so far as concerns the child. Very little chloroform passes through the placenta.

HISTOLOGY OF THE PLACENTA RETAINED AFTER ABORTION.

Chaput (*Arch. d'obstet. et de gyn.*, March, 1890). This paper is a brief contribution to the histology of the placenta retained after the death of the fœtus occurring in the early months. It is based upon two cases. In the first the fœtus died at the second month and the secundines were removed with the curette two months later. In the second case the death of the ovum occurred at the third month, both fœtus and placenta being retained in the uterus for two months. The uterus was evacuated after incising and dilating the cervix. In both instances the placental tissue was sclerosed. The number of villousities was diminished and their volume five to ten times larger than normal. No vessels were traceable in the villi. The most notable change was an enormous connective-tissue hypertrophy. These findings show that the placenta may continue to grow after the death of the fœtus. Yet the growth does not appear to have persisted for the entire period of retention.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M. D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

POISONING BY ANTIFEBRIN.

Armstrong (*Ther. Gaz.*, April, 1890) records several cases of poisoning from the above drug. The conditions which arise are all of the nature of collapse, and are characterized by:

1. Feeling of suffocation.
2. Cardiac pain.
3. Peculiar pallor.
4. Coldness of skin.
5. Cyanosis of lips.
6. Vertigo.
7. Emesis.
8. Loss of muscular control.
9. Pulse rapid and weak.
10. Respirations superficial.
11. Pupils inactive.

ANEURISM OF AORTA.

Powell (Med. Sci., Lond., Dec., 1889) believes that the true aortic aneurism is of the sacculated variety. Fusiform aneurism bears a closer relation to the heart than the sacculated variety, and treatment in it should be given to the heart. The manifestations of the sacculated variety are always from the presence of a tumor. In making the diagnosis it is always necessary to be certain this tumor is a "vessel tumor." Mere pulsation never means aneurism. The pressure signs must always be present. In doubtful cases of abdominal aneurism, chloroform is of aid in making a diagnosis. A diastolic murmur is of great importance, meaning intra-arterial disease and, if the pressure signs are present with this, there is always evidence of aneurism. Thrills are not always to be found. The affects of pressure manifest themselves by causing disturbances in the parietes, viscera, bronchial tubes, œsophagus, upper respiratory tract, and vessels. Solid growths exhibit less change in signs than the aneurismal tumors. Upon auscultation a "systolic jog" is sometimes found. More important than this is the diastolic shock sound. In order that this diastolic sound may be present, the aneurism must be near the aortic arch; it must be sacculated, and there must be no marked aortic insufficiency. The laryngoscope is of value in making the diagnosis. The Tuffnell treatment is indorsed. It accomplishes three things:

1. Makes fewer the cardiac contractions.
2. Lessens the amount of blood.
3. Diminishes the blood pressure.

In this way the aneurism is not so frequently distended, the blood may become more fibrinous, and the blood current is slowed, aiding coagulation. Various other methods of treatment were mentioned.

NOTE.—In addition and supplemental to the above, we give an extract from personal notes of a lecture delivered at Brompton Hospital in December, 1887, by Dr. Percy Kidd. The lecture was on "Obstruc-

tion and Stenosis of Trachea and Bronchi." In the lecture were given certain signs of new growths and aneurism. These were :

1. Enlarged superficial veins.
2. External tumor.
3. Pulsation in abnormal positions.
4. Dulness in median line.
5. Bruits.
6. Pain.
7. Paralysis vocal cords.
8. Unequal pupils.
9. Unequal pulses.
10. Sex (male).

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

PRESERVATIVES.

The use of preservatives for articles intended for food and drink is an important one, both for the manufacturer and consumer. From a sanitary point of view, it is doubtful whether any of the preservatives ordinarily added to articles intended for human consumption ought to be encouraged. Laws exist in Continental European countries prohibiting the use of certain of these preservative agents. Salicylic acid is prohibited by most of them, and the manufacturers are there beginning the use of benzoic acid, which is preservative in small amount and is not easy to detect. After a discussion at a convention of chemists at Speyer, Bavaria, on the 10th of September, 1888, the conclusion was reached that boric acid, as a preservative for foods, is to be regarded with caution. Sanitary authorities have generally spoken in stronger terms of the use of boric acid, and yet it enters into the composition of a large number of the preservatives in the market. Hirschsohn (*Chem. Ztg. Repertor.*, 1889, p. 46), gives a description of several different boro-glycerides which he recommends for preserving foods. Boro-glycerine is prepared by heating glycerine with boric acid, in the proportion of 124 of the former to 190 of the latter. He also recommends sodium, calcium, and magnesium glyceroborates. These compounds are mostly tasteless, and quite soluble in water and alcohol.

Magnesium borate is recommended as a remedy in throat affections.

A. R. Rosen recommends the following method for preserving meats: Boric acid or its salts are dissolved in water and the solution is then frozen. The article to be preserved is then covered with this ice, with the result that the meats are preserved after the ice melts.

Dr. E. Polenske (Kaiserlich Gesundheitsamt, 1889, p. 198), has made an examination of ten commercial preservatives intended for meats. Three of the ten contained sulphurous acid or sulphites; two contained borax, and five boric acid; one each contained alum, arsenious oxide, salicylic acid, and free phosphoric acid; two contained glycerine, and two boroglycerine; three contained nitre, and six common salt. The one containing arsenious acid ($1\frac{2}{3}$ grains per quart) was sold under the name of Stuttgart Preserving Fluid, for meats. (Translated).

This was the only one actively poisonous, but several of the others were decidedly objectionable. Indeed, we should object to the addition of anything to our meats which is not a natural ingredient of food or cannot be converted into a compound natural to the human body.

PHYSIOLOGICAL ACTION OF SACCHARIN.

The Vierteljahreschrift der chemie der Nahrungs- und Genussmittel, 1889, p. 319, gives the following review of the physiological effects of saccharin, the new sweetening agent. According to the investigations of Plugge, a .03 per cent. solution of saccharin entirely destroys the action of ptyalin, and hinders the action of pepsine and pancreatine. On this account it is injurious to diabetics, to whom a good digestion is very important. On the other hand, E. Gans, Stevenson and Wooldrige express the opinion, based upon their experiments, that saccharin is not injurious to the digestive processes, but it hinders the secondary decompositions of the contents of the intestinal canal.

The Royal Academy of Medicine at Madrid has given the opinion that the addition of saccharin to foods and drinks should be regarded as an adulteration, and that articles of food, or drink, so treated should be refused entrance into Spain.

A similar judgment has been given by the Imperial Academy of Medicine at Rio de Janeiro, Brazil. France has adopted laws forbidding its use in foods.

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital : Curator and Microscopist, New York Eye and Ear Infirmary.

PARALYSIS OF OCULAR MUSCLES IN CONGENITAL SYPHILIS.

Lawford (Oph. Review, 1890, p. 97) gives the notes of two such cases, their chief interest lying in their rarity, only three previous cases having been found by him in the literature of the subject. In both there was marked benefit from the administration of mercury and iodide of potassium.

CONTRIBUTION TO THE ETIOLOGY OF CONVERGENT STRABISMUS.

Weiss (Kl. Monatsbl. f. Augenheil., 1890, p. 145), continuing his numerous observations as to the relation of form and position of the orbit and skull to the various refractive errors, publishes in considerable detail the measurements obtained at an autopsy of a case of convergent squint. He found that the squinting eye was placed considerably nearer (3.5 mm.) the middle line than its fellow. Under an equal impulse to convergence and consequent equal convergence angle during fixation of a near object, the line of vision of the eye placed nearer the middle line would cross this middle line at a point nearer the eyes than that at which the line of vision of the more removed eye would cross it, and there would therefore be what one might call a relative squint of the nearer eye. When both eyes have good vision this tendency is easily overcome, but when from any cause the vision of the nearer eye is reduced (in the case examined by Weiss there was extensive corneal opacity) the eye yields and squint results. When one considers, however, the readiness with which by slight lateral movement of the object a point may be found at which the visual lines would cross at the same convergence angle, the importance of such orbital irregularities as those mentioned by Weiss seems very slight.

PATHOLOGICAL ANATOMY OF ACUTE GLAUCOMA.

It is not often that a microscopical examination of an eye affected with acute glaucoma can be made, and therefore the report of such a case by Birnbacher (ref. in Kl. Monatsbl. f. Augenheil., 1890, p. 153) is of special interest. Six days before the death of the patient from traumatic pleuro-pneumonia, the right eye (up to that time perfectly healthy) was attacked with acute glaucoma and vision reduced to perception of light. The left eye had been nearly blind for several years from chronic glaucoma. The examination of the right eye showed a marked change in the shape of the lens, its antero-posterior

diameter being increased to 5.2 mm. (pp. 4 mm.) and transverse diameter reduced to 7.5 mm. (9-10 mm.). In the anterior part of the eye the blood-vessels were dilated, and there was a notable increase of white blood-corpuscles in nearly all the smaller veins. The anterior surface of the iris and the endothelium of Descemet's membrane had become firmly adherent in the middle two-thirds of the upper periphery. This adhesion never reached, however, the extreme angle of the anterior chamber, although even here the surfaces were in contact. In the remaining circumference of the angle of the chamber the peripheral portion of the iris lay very close to the cornea without however touching it. Surface preparations of the choroid showed the capillaries, as well as the smaller and middle-sized veins, in part also the larger venous branches, filled with a preponderance of white blood-corpuscles—indeed, in places the capillaries for some distance contained only leucocytes. This vascular condition was most marked in the upper half of the eye. The arteries were either empty or contained normal blood. In the lower *venæ vorticosæ* there was nothing unusual, the upper, however, showed, in place of the delicate venous wall regularly coated with endothelium, a dense mass with nuclear infiltration, which narrowed in varying degree the vascular lumen. In the beginning the vascular wall was more evenly thickened, later these thickenings became more localized, having their long axes in the course of the vessel. The retina was everywhere normal, showing only in the neighborhood of the papilla a loosening of the nerve-fibre layer. Birnbacher regards the appearances as those of a diffuse serous choroïditis, and ascribes to the alteration in the shape of the lens—about the causation of which, however, he gives no opinion—the pressing forward of the ciliary processes.

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital; Assistant Surgeon, Brooklyn Throat Hospital; Instructor in Diseases of the Nose and Throat, New York Post-Graduate Medical School and Hospital.

SUPERNUMERARY TONSILS.

Jas. Donelan, in *Brit. Med. Journal*, May 17, 1890, reports a case of chronic hypertrophy of tonsils, the glands being swollen almost to median line. These were removed by Mackenzie's tonsillotome; after healing of the wounds deglutition was still difficult, and some difficulty in breathing existed. Examination with laryngeal mirror showed

another pair of tonsils, symmetrically placed, situated low down in the pharynx. Each of these bodies was about the size of a filbert, and their lower extremities overhung and almost hid from view the entrance to the larynx. They were separated from the normal glands by the posterior palatine folds and an interval of half an inch.

They were removed by the galvano-caustic loop; and this resulted in complete restoration of all the functions of the throat. The microscopic examination showed that all four bodies presented only the usual characteristics of hypertrophied tonsils.

TUMORS OF THE SEPTUM NARIUM.

Franklin H. Hooper (*Jour. Resp. Dis.*, April, 1890). During last ten years but two cases of nasal tumors arising from septum have come under author's observation.

CASE I.—Patient had complete obstruction of left nostril. Frequent epistaxis from same side. On examination, a smooth reddish growth presented, reaching to external edge of orifice and entirely occluding it. It was removed by cold wire loop and found to have been attached by small pedicle to anterior inferior cartilaginous septum. Microscopic examination showed it to be fibro-sarcoma.

CASE II.—Patient has known of neoplasm for three months, since has increased in size, till nostril nearly blocked; epistaxis occurs whenever nose is blown. The growth was freely movable and attached to anterior superior portion of cartilage of nasal septum. Profuse bleeding followed its removal by snare. Reported a myxo-sarcoma telangiectoides. Prognosis favorable.

THE CORTICAL MOTOR LARYNGEAL CENTRE.

J. Garel, in *Jour. Laryn. and Rhinol.*, May, 1890. Two cases are reported of pure laryngeal monoplegia without any other paralysis of same side. They were diagnosed during life as of cerebral origin, and this was verified at autopsy. The first a case of apoplexy. Right hemiplegia and aphasia from atheroma of cerebral arteries determining multiple foci in left hemisphere. Complete paralysis of left vocal cord due to a lesion of right hemisphere, localized in the probable seat of the cortical centre of the larynx. The second a case of ulcerative endo- and pericarditis. Pulmonary infarcts. Paralysis of left vocal cord from a small cerebral embolism localized in the corpus striatum, and involving the internal capsule.

The conclusions drawn are as follows:

1. There exists a cortical motor centre for the larynx in each cerebral hemisphere.

2. This centre is located at the foot of the third frontal convolution of the fissure that separates it from the ascending frontal.

3. The fibres originating from this centre pass to the level of the external part of the knee of the internal capsule, forming in the geniculate fasciculus, a motor laryngeal fasciculus, independent of the fasciculus for aphasia, and the hypoglossal fasciculus.

4. The laryngeal centre has a crossed action. Its destruction determines total paralysis of the vocal band of the opposite side (cadaveric position).



CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

VOMITING OF OBSCURE ORIGIN IN YOUNG CHILDREN.

Joseph Stedman, M.D. (Boston Med. and Surg. Journal, May 29, 1890). Case I.: Girl, æt. twenty-two months, taken suddenly ill with severe and persistent vomiting; well day before; not exposed to cold, contagious disease or excitement. Temperature was normal. No food retained during the day. Supposing the eruption of the inferior canine teeth was the cause, lanced the somewhat swollen gums; relief for a few hours only. On third day had had some sleep, but vomiting frequently of greenish colored mucus. Remedies of little avail; began to twitch, to cry out and be restless. Towards evening vomited; matter had a bad odor; was discolored; had dark specks in it. Food enemas given. On the fourth day symptoms worse; would not retain food by stomach; child exhausted; iacitation; urine scanty; seemed cerebral trouble. On fifth day vomiting frequent, but child would swallow vomited material; would have died from suffocation if it had not been for a clear-headed nurse; child's gums were scarified; bowels washed out, and peptonized enemas with brandy were given. In a dejection an apple-seed appeared, from an apple eaten a week before. Under rest, food enemas, and sleeping potions, child recovered.

Case II.: Child between two and five years of age; several attacks of vomiting, generally lasting a week. There was no gastritis, no fever, no acceleration of the pulse; but emaciation was marked, skin pallid, and strength reduced. No remedies were of any avail. Food was given by enemas; but the best results were obtained by removing child from noise of the house, placing it in the attic with a trained nurse. Now the child is fourteen, and is rarely sick. Never could account for the vomiting.

The third case was similar to the first. A child of three years old, exceedingly active, with a marked nervous organization, was kept on starvation plan, with rest, for four days, and vomiting suddenly ceased.

THREE CASES OF ACUTE THORACIC DISEASE IN CHILDREN SIMULATING MENINGITIS.

M. A. Morris, M.D. (Boston Medical and Surgical Journal, March 13, 1890). These were three cases, where the cerebral symptoms were so marked that in two of them tubercular meningitis was diagnosed, until pneumonia was discovered and recovery ensued. In all the cases there was screaming, due probably to headache. In one case stupor lasted seven days.

DIET OF CHILDHOOD.

Wm. F. Waugh, M.D. (The Dietetic Gazette, March, 1890). "When the period of the first dentition is past we find scarcely anything to guide us in feeding the growing child. And yet this is a period the mismanagement of which is fruitful in future misery. It is my conviction that if we are a nation of dyspeptics, this is due to the neglect of our children's diet." The writer then points out how readily even physicians fall into ruts, and accept statements which have been handed from one to another. "The eating of fruit is discouraged, because it is indigestible; of fat, because it makes one 'bilious'; of pastry, because it is 'rich,' etc. If any article of food is found to disagree with the child's stomach, it is thenceforth forbidden to partake of that article. In a word, the ruling principle in the feeding of children, with the profession and laity alike, is the avoidance of everything which is calculated to tax in any degree the powers of the child's digestive organs." The application of this principle to the development of the mental powers would be attended with unfavorable results.

"Who," says the writer, "is best calculated to withstand the 'slings and arrows of outrageous fortune,' the convent-bred French demoiselle or an intelligent, self-reliant American girl? Applying the same reasoning to the body it is shown, for example, that because feeble children of scrofulous diathesis are liable to catarrhs it aggravates the weakened condition to keep such children housed rather than to have them live out of doors. "The question of the digestibility of any article depends largely upon the custom of the eater in regard to it. Taste also, or preference, depends upon the same thing. Few persons relish terrapin or oysters or lobsters the first time they taste of these foods; but after the palate has become accustomed to their flavor, the

individual may become exceedingly fond of them Digestibility follows appetite. If an article of food be relished it will be easily digested, as a rule; to which the exceptions are numerous in after years, but rare in childhood, unless an undue quantity be eaten." . . . When children begin to manifest preferences for one form of food or repugnance to other forms, then is the time for training to begin. Distaste arises from a difficulty of digesting the article in question, or from the fact that the flavor is one to which the child is not accustomed. The latter difficulty is removed by teaching the child to persist in eating it for a few times, the former can be obviated in the same manner. The perfectly healthy stomach is able to digest any kind of food its possessor sees fit to put into it. . . . The organ must be trained to do its work obediently. Take the food which disagrees, and give a little of it at every meal, gradually increasing the quantity. The stomach will learn to manage it, and by the time the child has become accustomed to the taste, so that no longer it is disagreeable, the difficulty of digestion will have vanished. . . . To sum the matter up, it is my belief that the highest type of a healthy stomach is one which is omnivorous, digesting any food given it, and where all foods are eaten with a relish; and that this condition can be secured in nearly every case by a systematic training of the stomach of the child, according to the method outlined above, accustoming it gradually to every variety of aliment, especially those which at first seem to disagree or to be distasteful."

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

PRELIMINARY PROGRAMME OF THE SECTION FOR DERMATOLOGY AND SYPHILOGRAPHY.

International Med. Congress, Berlin, August, 1890.

- (1) Pathology of Pigmentations and Discolorations of the Skin.
- (2) Diagnosis, Prognosis and Therapeutics of Chronic Gonorrhœa in Both Sexes.
- (3) Treatment of Syphilis.
 - I. Results.
 - a) Of Excision.
 - b) Of General Preventive Treatment.

II. The Commencement, Duration (chronic, intermittent or temporary), and Safest Treatment of Constitutional Syphilis.

- (4) On the Treatment of Inflammatory Diseases of the Skin.
- (5) The Special Indications for the Various Methods of employing Mercury in the Treatment of Syphilis.
- (6) To what Exciting Causes is the Outbreak of Tertiary Forms of Syphilis to referred?
- (7) On the Influence of Diatheses, of Nervous Causes, and of Parasites, in the Etiology of the Group of Diseases termed Eczema?
- (8) On the Nature of Exanthemata due to the Use of Drugs.
- (9) Lupus Erythematosus, Its Nature and Treatment.

(The above programme has been a good deal and unfavorably criticised by resident dermatologists, as, for instance, in regard as to what gonorrhœa has to do with such a section, being covered by neither head. Then, again, there is, or would seem to be, an "intolerable quantity of sack" (syphilis) to the amount of bread. The questions, too, are so broad in their scope that it would take nearer fifty than five days to adequately cover the ground laid out. Still, hope for the best is always permissible, and doubtless some useful sparks will be smitten out by the collision of heads, decidedly not all wooden.)

ABSTRACT OF EXTRA-GENITAL CHANCRES OBSERVED IN THE SERVICE OF THE CLINIC (PROF. FOURNIER'S) FOR CUTANEOUS AND SYPHILITIC DISEASES.

By M. Veslin, "Externe du Service," 1888; M. Henri Foulard, 1890 (*Annales de Derm. et Syph.*, April 25, 1890, pp. 317 to 325).

M. Veslin states that in the same service, in 1886, forty-nine cases were reported by M. Nivet, then in charge; forty-five in 1887 by M. Morel-Lavallée; but that in 1888 he had but twenty-six of such cases to report; however, during that year the service was closed about six weeks, from August 1st to September 17th.

M. Henri Foulard reports for the same service during the year 1889. Thirty-four cases, twenty-seven of whom were purely hospital cases, the remaining seven having been seen by Prof. Fournier in private consultations.

(It must not be considered, as from the title it would seem, that all the cases presented themselves with the primary lesion in bloom, in a fair proportion only the induration was manifest and history of infection given.)

Collation of the years 1889-'89 gives statistically—

Males, -	-	-	-	-	-	-	33
Females, -	-	-	-	-	-	-	24
Young children,	-	-	-	-	-	-	3
Total,	-	-	-	-	-	-	60

Many had multiple chancres, but out of the whole number given above a total of thirty-two were cephalic chancres, occurring either on the cutaneous or mucous surfaces or cavities of the head and face. The whole of the briefly-detailed histories which accompany the figures are of great interest as pointing out the relative frequency of extra-genital infection, and by inference the dangers to which carelessness as well as vice expose the individual.

(A chancre on a very unusual site has lately come under our notice ; it was situated on the skin of the upper right eyelid.)

BACTERIOLOGY.

BY B. MEADE BOLTON, M.D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

PROTECTIVE INOCULATIONS.

(Continued from page 491.)

These observations attracted very lively interest and called forth strong opposition, especially in France, but also won many advocates. A correct judgment was of course not possible until Pasteur could establish his claims by a large number of experiments. Before he was able to do this, however, Colin, Peter, Lutaud, and Percheron, in France, and Biggs, in America, all opposed Pasteur's inoculations for hydrophobia, partly on *a priori* grounds, partly on the very inadequacy of the statistics of Pasteur and his followers, and partly on account of the contradictory results obtained by other experimenters. Abreu, von Frisch, de Renzi, and Amoroso pronounced the use of Pasteur's inoculations in human beings unadvisable and even dangerous, as a result of their own experiments. The experiments of de Renzi and of Amoroso were shown to be open to criticism, but those of Abreu and of von Frisch seem to be trustworthy. On the other hand, Pasteur, in his letter to Duclaux upon hydrophobia, dated December 27, 1886, says in one place :

“For every unprejudiced mind, the facility with which it is possible to render dogs refractory to hydrophobia, before or after the bite [of a mad dog], by the prophylactic method, described in my note to the Academy of Sciences, of the 26th of October, 1885, and the statistics which I presented to the Academy, March 1, 1886, and November 2d following, show, without any possible dispute, the efficacy of this method. The results in foreign laboratories for the prevention of

hydrophobia are no less satisfactory. Insuccesses are very small in number. Many of the laboratories have not as yet had a single death. Dr. Budwid, in Warsaw, wrote me, under date of November 22d, that he had treated 84 cases up to that time, and that all are doing well. The Laboratoire Antirabique, of Prince Alexander of Oldenbourg, at St. Petersburg, had treated 118 cases up to the 8th of November. The treatment was unsuccessful only in one case, and that was an old man of seventy years with very severe bites on both hands; the period of incubation in this case was only twenty days, which necessarily placed difficulty in way of the success of the method. Under date of October 26th last, Dr. Petermann, of the Military Hospital at Moscow, informed me that of 112 cases which he had treated he had only 2 deaths, and in each of these cases the disease made its appearance before the end of the treatment."

The insuccess of Gamaleïa, in Odessa, was regarded as a serious set-back; but Pasteur explains them from the fact of the severity of the wounds and the weakness of the material used to inoculate with. Gamaleïa had 7 deaths, with from thirty-five to ninety days' incubation, out of a total of 101 cases. Gamaleïa's subsequent results, with less-attenuated virus, gave much better results. He treated in all 325 cases.

Vestia, in Naples, obtained good results. Ullmann, in Vienna, treated 96 cases without a single death. Parschensky, in Samara, Russia, had one death, after the second inoculation of the series, in 47 cases treated. In this case the patient died twenty-three days after being bitten.

The statistics since the publication of the foregoing have been more and more favorable. The most trustworthy statistics are those published from Pasteur's laboratory. In the June number of the *Annales de l'Institut Pasteur*, for 1887, are given the results of the inoculations for the thirteen months from November 1, 1885, to December 31, 1886. Taking from these statistics only those cases where the persons were bitten in the face or head, there was a mortality of only 5.6 per cent. Out of the 214 cases treated, only 12 died. These results are very striking in view of the fact that without treatment the mortality is variously stated at 80 to 88 per cent. in 214 cases, 178 to 192 deaths. General statistics for persons bitten in various parts of the body show a mortality of 1.30 per cent. in 2,682 cases, 35 deaths. Without inoculations most trustworthy statistics give a mortality of from 12 to 16 or 20 per cent. for bites in various parts of the body.

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ORIGINAL ARTICLES.

TWO CASES OF OPERATION FOR REMOVAL OF PIECES OF CATHETER FROM THE BLADDER.

BY J. S. WIGHT, M.D.,

Professor of Operative and Clinical Surgery at the Long Island College Hospital.

Read before the Brooklyn Surgical Society, June 5, 1890.

CASE I.—Mr. S., a business man and farmer, about forty-one years of age, had some urinary difficulty, and called his family physician, who introduced a No. 8 soft catheter in order to draw his water and give him relief. When he came to remove the catheter, it broke and left some six inches of it in the urethra and bladder. The doctor, assisted by a surgeon, worked for about an hour on the evening of the same day to remove the piece of catheter, and did not succeed. Another attempt to remove it was made on the following afternoon: it failed. Three attempts were made with urethral instruments, and the result was that the piece of catheter was entirely in the bladder.

This case was brought to my attention by Dr. Bartley. I advised him to have his friend come to the College Hospital, where I could make an examination, and determine what could be done. This was in the first week of September, 1887, about fifteen days after the accident. In brief, the examination disclosed the usual symptoms of stone in the bladder. The sound struck a hard substance like a calculus.

The patient and his friends were anxious to have the offending body removed through the urethra, without a cutting operation. This I declined to do, for it was impracticable. I advised an operation the same as for stone in the bladder. Assisted by Drs. Bartley, Cochran and Rogers, I operated September 8, 1887. The perinæum was not very deep; the membranous and prostatic urethra was quite short; the bladder was low down, and was easily reached with the knife and fingers; and so there was nothing special about getting into the bladder, except that the tissues were soft and easily torn, and great care was required to keep from pushing the bladder away from its inferior attachments. The operation was that of left lateral lithotomy. With a narrow forceps I removed three pieces of catheter; they were nearly equal in length, and together measured about six inches. They were all completely encrusted with calcareous matter, from one-sixteenth to three-eighths of an inch in thickness, thus making them veritable calculi with large nuclei. This patient did well after the operation. Yet the progress of the case was rather slow. A small fistula kept open for several months; it finally closed.

The following remarks are now proper: Two prolonged attempts to remove the piece of catheter by urethral instruments completely failed. The urethral and vesical irritation caused by these instruments was no doubt harmful to the patient. At the time of my operation it would have been impossible to remove the encrusted pieces of catheter through the urethra. And it is reasonably certain that they could not have been satisfactorily crushed, in order to wash them out of the bladder. Truly, we did the very best thing for our patient under the circumstances.

CASE II.—Mr. E., about forty-five years of age, in January, 1888, introduced a flexible catheter into his bladder to draw the water, and when he removed it there was a piece left. The catheter had broken, and the length of the piece was not accurately known. In June of the same year calcareous matter had concreted about the piece of catheter in his bladder, so that he was in the condition of a man having stone. He suffered very great pain. His emaciation was considerable. He was operated on by a surgeon of skill. The operation was litholapaxy, after the method of Dr. Bigelow. The crushing was thoroughly performed, and the bladder was well washed out. But, unfortunately, the patient did not have complete relief from pain and difficulty. In fact, it was not long when his condition was even worse than before the operation. He got along as well as he could till the following year, when he consulted Dr. A. W. Ford of this city. In June, 1889, Dr. Ford requested me to see his patient. The symptoms of stone were marked. The sound confirmed the diagnosis. The stone was large, or was

made up of several irregular masses; it appeared to be soft. The patient was much emaciated, and had lost most of his physical and moral courage. There seemed to be no hope for him without an operation, and an operation did not promise very much. Yet I advised an operation—same as for stone.

June 15th I assisted Dr. Ford in performing lithotomy; Drs. Harigan, Cochran, Welty and others were present at the operation.

There was nothing unusual about the cutting part of the operation; it was easy to reach the bladder with the knife and finger. But the contents of the bladder deserve some notice: The calcareous substance was made up of several pieces more or less adherent. Some of the pieces were quite firmly attached to the surface of the bladder. A few of them could be removed by the forceps. It was necessary to use a scoop to detach others. One piece of catheter, one-half inch in length, thickly covered with calcareous matter, was removed, the opening through it was quite pervious. A considerable body was hanging by one end from the roof of the bladder. It was seized by a pair of forceps, and forcibly twisted off and then removed. It proved to be a piece of catheter, a little over an inch in length, and was thickly incrustated with calcareous matter. In all there were some fifteen pieces removed. They were very light, and some of them appeared to have small pieces of catheter for nuclei. The operation-wound was healing kindly, and there was no surgical fever. The patient was improving; but an attack of acute dysentery set in, causing death on the 11th of June.

In regard to this case, we are justified in making the following remarks: A scientific attempt, by a skilful surgeon, to remove a piece of catheter from the bladder through the urethra was partly successful; and yet the patient's condition was not improved by the operation. Two considerable pieces of catheter were left, and they were nuclei for calcareous matter. And one may ask this very reasonable question: Would it not have been better to have performed lithotomy on this patient at the outset? One may feel quite certain that it would have been so. The last operation had no special difficulties, and could have been performed the year before, when the patient was in much better condition, and might have saved his life.

There are two points related to these cases that we may briefly consider: In going into the bladder great care must be taken so as not to push the neck of the bladder away from the perineal structures, when the finger of the surgeon is introduced. When the point of the knife reaches the shoulder of the staff, it must be withdrawn. A grooved director must then be passed into the bladder under the staff. Then the finger of the surgeon is gently pushed into the bladder

between the beak of the staff and the grooved director. In this way safe dilatation of the neck of the bladder is accomplished without dislocating the bladder upward. I have had occasion more than once to test the great value of this procedure. Also, it seems to me that a sound new catheter will not break while being introduced into the bladder. I saw parts of the one used in Case I., and when they were bent to any extent, small rings would be detached. In Case II. the catheter had been used long enough to make it fragile. An old catheter must not be used. Nor must any catheter be used too long. It is reasonably certain that we cannot have cases of the above kind if we always use good new catheters.

Finally, it will be seen that our conclusion is, that it is best not to delay in the removal of pieces of catheter in the bladder. While it might happen that the surgeon would be lucky enough to remove them through the urethra, it would appear that the uncertainty of success is great, and that the operation of lithotomy should be performed at once, even before calcareous incrustation takes place, unless there is some constitutional condition that contraindicates it.

DISCUSSION.

Dr. WUNDERLICH.—I have listened with great interest to Dr. Wight's paper, and fully agree with him as to the advisability of an early operation for removal of pieces of catheter from the bladder. In some instances it may be preferable to make the suprapubic instead of the median operation, because it renders the bladder more accessible, and the search for the broken piece or pieces can be made under the supervision of the eye. However, due consideration should be given to the greater danger of the suprapubic operation; and the surgeon must be guided in the choice of the operation by the exigencies of each case.

Prior to any cutting operation I would make an examination with the cystoscope, to ascertain the position of the broken piece of catheter. Having ascertained the position of the piece of catheter, it becomes more feasible to grasp it with a small lithotrite in such manner as to render the extraction through the urethra possible without undue injury to the parts.

In this manner pieces of catheter have been removed from the bladder by Fillenbaum and Antal; a pin by Niccoladoni; and silk ligatures, which had given rise to the formation of calculi, by Nitze and Gross.

Dr. RAND.—It seems to me that no one rule can be laid down as the proper one to follow in all cases. The operation indicated will depend upon the character of the foreign body present, as well as upon the length of time it has been in the bladder. In the case of an

elastic catheter or of any similar foreign body, recently introduced, which, if once seized at any point can be withdrawn through the urethra without damage to the tissues; a reasonable effort ought to be made to seize and remove it in this way. Where a foreign body of this character has, however, been a sufficient time in the bladder to be well covered with calcareous deposit, the course adopted by the author of the paper would be undoubtedly the proper one.

Where the foreign body is hard and cannot be safely extracted unless seized by the extremity, a thing difficult if not impossible to do, the best course to pursue would again be determined by its character. If it can be safely crushed and evacuated as in the operation of litholapaxy, this would certainly be preferable to cystotomy. If, however, it be lead or glass, or a splinter of bone, any substance that cannot be crushed, or, if so treated, would endanger the bladder walls from sharp fragments, then a cystotomy would be indicated.

Dr. PILCHER.—It seems to me the suggestion of the use of the cystoscope is one that is well worthy of being taken into consideration by surgeons at all times, for the purpose of getting at an accurate conclusion as to whether in a particular case further attempts to remove through the urethra would be justifiable or would be likely to be attended with success, or whether it were necessary at once to proceed to the cutting operation. I can see in the result of one of the cases which has been related here by the author of the paper this evening, a very valuable comment upon the undesirableness of attempting to use the method of litholapaxy, since by the chewing up of the catheter, which was done, instead of one or two pieces, a multitude of small pieces were left and became nuclei of new accretions; and adhesions to the wall of the bladder formed from the inflammatory reaction which resulted. It seems to me that if an ordinary gum, or a soft flexible catheter, silk or pure rubber, either, has been broken off in the bladder, that there is not very much danger to be apprehended in attempting to seize it with a medium sized lithotrite, and attempting to remove it, and if it breaks again, if it is so brittle that it resists such attempts, then there is nothing further to do but to go on with cystotomy. In those cases where it is covered by phosphate deposits, the use of a lithotrite would commend itself to grind it up as we would any other accretion in the bladder, and endeavor to suck it out by the washing-bottle. When we come, however, to choosing a cutting method for removal of such bodies, it seems to me that except in very extraordinary cases, the ordinary median perineal operation offers the most rapid, most safe and most easy method of gaining access to the bladder and removing the offending material. It has never seemed to me that when the urethra had been opened in its membranous portion

and the point of the finger was fairly engaged in it, that there was very danger to be apprehended from the tearing away of the bladder from its perineal attachments, a point to which attention has been called in the paper this evening. I think there is more danger of that when we make those wide excursions with the knife which are made in the ordinary lateral operation. I think there is much less danger of that in the median operation where, except in unusual circumstances, we do not cut the prostate at all, but simply dilate it with the finger, as it slowly advances as a dilating force. Ordinarily the question, what we shall do with these foreign bodies, comes to us as a matter to be decided very soon after the foreign body has reached the bladder. It is unusual for us to have as long a history as the second case which the author has presented to us this evening, and we are hardly accustomed ordinarily to have such necessity, or such adhesion of fragments to the various portions of the bladder, or such large size attained by the encrusting material that would be deposited upon it as to make it necessary to open the bladder above the pubis. But in case there should be any trouble of that kind, I should heartily agree with the recommendation that has been made for using the suprapubic operation in gaining entrance into the bladder. I infer from the history of the first case that the catheter had first projected into the urethra, and that, as the result of the manipulations to which recourse was had for the purpose of trying to seize it, it was finally pushed into the bladder and so lost. But if surgeons would only be mindful of the possibility of immobilizing the catheter by pressure through the perinæum while they carefully pass down instruments which might seize it, its more ready removal might be expected to be secured. In case it was found impossible to do that, still a very slight incision of the perinæum down to the point which could be detected by pressure, and there seizing it and removing it through the small opening, would be a matter of considerably less importance than the more extended operation needed when it has once been pushed into the bladder.

The discussion of such precautions is perhaps not relevant. I take it the question really is, What shall we do after the foreign body has gotten into the bladder, rather than while it is still in the urethra. The Society will remember that I had the good fortune last winter to suck into the eye of a large evacuating catheter a piece of a soft rubber catheter, more than half an inch in length, that had been broken off in the bladder. Having been thus exposed, the piece was evacuated with the debris of some calcareous material that had been in the bladder before the catheter had been introduced.

Dr. WIGHT.—In regard to the first case, there was no positive evidence that I could obtain in reference to the catheter being still in the

urethra or the piece of the catheter being still there; I did not so state in the report of the case. It might have been there though the medical men who were dealing with it were not willing to say that it was; it might have been there, nevertheless, and worked its way in by the manipulation.

Now, with reference to the condition of the bladder, exclusive of cases Dr. Rand speaks of, which are cognate, a bladder is likely to be in a condition not very favorable for manipulation or for removal by litholapaxy, and that ought to be a determining influence in regard to an operation.

I concede at once that if you cut off a piece of any catheter, either flexible or soft, and put it into a healthy bladder, I can see then a reason for making an attempt to get hold of it; and if you did get hold of it, to pull it out. But the practical difficulty is, that when one of these instruments breaks off, it is fragile and brittle, and you cannot do this. But if you put your finger in a hole you cut there, you can tell all about it without the least trouble or difficulty. The first patient I reported was possibly under the operation a minute and a half or two minutes, it was done and over and the man got well. The operation of getting into the bladder through the perinæum is very brief, takes but a moment, and we know that it is a small operation to take out the foreign body; and while I can see that there might be cases where it would be necessary, I don't see why, and yet I may be wrong, but I don't see why you should go through with a more lengthy and difficult operation in order to take out what you know is in the bladder. If there is a large stone that you couldn't crush very well from below, then I can see that that would be the operation; but I should hardly think of operating suprapubic rather than subpubic in such cases. I believe I am in the main right, and I am glad to be supported by the opinions of the gentlemen present, that in such a case, with such a piece of catheter just slipped off in the bladder, the method I have suggested is the best for the patient, the safest, and the best for the surgeon. One of these men who performed this operation in the second case I have reported, was one of the best men in the country, and I have no doubt he did it conscientiously. While I can see that the exceptions made by Dr. Wunderlich and others are all right, yet my experience in these two cases confirms my view and marks out a plain line of duty to me, and if I had a case to-morrow, I would do the same thing.

NASAL BACTERIA IN INFLUENZA.

BY EZRA H. WILSON, M.D.

Read before the Brooklyn Pathological Society, February 13, 1890.

This specimen under the microscope is a cover-glass preparation of the nasal secretion in a case of influenza, mounted January 12th.

I wish, in presenting this slide, to call the attention of members of the Society to the work recently done by Dr. J. Wright in the laboratory of the College of Physicians and Surgeons under the direction of Dr. Prudden, in the investigation of nasal bacteria in health. This observer made a most careful series of experiments in examinations, cultivations and isolations of the different forms of micro-organisms found in the nose in health. The article can be found in the "Journal of the American Medical Association," September 21, 1889. I will not quote the entire article, but only the summary.

In six cases, the *staphylococcus pyogenes*.

In three cases, the *micrococcus flavus desidens*.

In one case, the *penicillium glaucum*.

In one case, the *micrococcus cereus flavus*.

In one case, the *micrococcus tetragenus*.

I made, during the recent prevalence of influenza, several cover-glass preparations of the nasal secretion, and observed the following:

1. There was a vast increase in the number and variety of micro-organisms over those in health.

2. That this number bore a direct ratio to the severity of the symptoms.

3. That the prevalence of streptococci over staphylococci was evident, and that a diplococcus, probably the pneumococcus of Frankel, was very abundant.

4. The presence of a bacillus, looking very much like and probably identical with Koch's bacillus tuberculosis, although not behaving the same with decolorizing agents.

The *micrococcus tetragenus*, or at least a tetrad resembling it, was very frequently found.

I do not claim to be absolutely positive about the identity of any of these micro-organisms, because no cultures were made and none were isolated; but one can be reasonably certain of well-known organisms.

In the specimen under the microscope, which is under a one-twelfth oil-immersion lens of Zeiss, you will see the enormous number

of micro-organisms. You will see that a large number of them are chain-cocci, and you will see numbers of diplo-cocci. This specimen is really of no special interest, only that it illustrates in a beautiful manner the increase in the number of bacteria, and the method of staining has brought them out fairly well.

I believe, although the only accounts I have seen are in the daily papers, that two observers in Vienna have claimed to have discovered the specific organism of "grip;" but this claim has been denied by German bacteriologists, who say the organism claimed as the cause of "grip" is identical with the pneumococcus of Fränkel.

SURGICAL TREATMENT OF COUGH IN DISEASES OF THE UPPER AIR-PASSAGES, WITH DEMONSTRATION OF INSTRUMENTS AND SPECIMENS.

BY J. W. GLEITSMANN, M.D., NEW YORK

Read at the Sixth Annual Meeting of the Fifth District Branch of the N. Y. State
Medical Association, May 27, 1890.

Before fully entering into the subject of my paper, I may be permitted to make a few general remarks about cough and its physiological origin. As we all know, cough is not a disease, but a symptom, most frequently observed in affections of the respiratory organs. But its cause must often be looked for in lesions of other and more remote organs, and in such cases it is sometimes difficult to find the locality exciting the cough.

Cough is a quick and forcible expiratory effort, or a succession of such efforts, accompanied with a partial closure of the glottis, and preceded by a more or less deep inspiration. The prime cause of cough is an irritation of the ramification of the pneumogastric in the mucous membrane of the air passages. Numerous experiments have been made by various investigators to determine the regions whence cough could be excited physiologically. Three localities were found which most readily are affected by artificial irritation, viz.: the interarytenoid space of the larynx, the lower surface of the vocal cords and infraglottic space as far down as the cricoid cartilage, and finally the bifurcation of the trachea.

Cough can also be induced by irritating the glosso- and ary-epiglottic fold, the free border of the epiglottis, and the trachea and bronchi. Irritation of the pharyngeal nerve, of the posterior pharyngeal wall, and of the soft palate is generally followed by cough. The pleura

costalis and œsophagus have also been found to respond in the same manner to the physiological experiment. Finally, Koht produced cough by pressure upon the rhomboidal fossa below the cerebellum, and he calls this locality the cough-centre. From the foregoing we see that all the nerves, exciting cough, are branches of the pneumogastric, viz., the pharyngeal, the superior laryngeal, and the pneumogastric itself.

By irritation of the above-named localities cough can be excited under physiological conditions without existing lesion. If cough is present in the course of diseases of other organs which generally do not produce it, we have a pathological condition, the cause of which we must endeavor to locate. In order not to be misunderstood, I may state that I do not consider a cough brought on by an acute laryngitis a normal condition. But in this case we may consider the cough one of the usual symptoms of the disease; while, with a normal condition of the above-mentioned localities, the origin of the cough must be determined by a careful examination of the whole system.

It would carry us too far to enumerate all the organs or diseases in which, in exceptional cases, cough has been observed. It will suffice to name a few and the more important instances. Diseases of the uterus can produce cough, and several cases are known in which the cough ceased after introduction of a pessary, only to return after its removal. In diseases of the digestive organs, cough has repeatedly been observed—for instance, in consequence of the presence of ascaris in the intestinal canal. Brücke treated a boy who suffered from a very severe and obstinate cough day and night, and who experienced instantaneous and permanent relief after vomiting copiously. Leyden had a patient suffering from colic brought on by gallstones: cough came on several times twenty-four hours before icterus set in, and disappeared with the yellow coloring of the skin. Smith, who also treated several patients with cough in consequence of abdominal affections, describes a case in which the rubbing of a wart on the back excited violent cough. In Ebstein's patient the slightest touch of the body produced the same symptom. It is well known that some people cough when exposing themselves to a draft. After Brücke's explanation, the general nutrition of the central nervous system of such individuals is affected and its irritability increased. Ear cough is excited in a number of men by irritation of the external meatus. Some ascribe it to excitation of the ramus auricularis of the pneumogastric; others assume irritation of sensitive fibres of the fifth nerve. Strübing, who is the authority for some of these statements, presents the interesting and instructive clinical history of a young woman of nineteen, in whom cough could be excited from the skin, the mucous membrane

of the nose, by pressure on the breasts and ovaries—in short, by the irritation of sensitive fibres which ordinarily are not connected with the cough-centre. The patient had been taken ill under the symptoms of a catarrh of the respiratory organs, followed by cough. As she lived under unfavorable conditions, the hysterical symptoms increased, and, as the cough-centre was already abnormally excited, every irritation of the periphery affected it, instead of the convulsive centre, as is usually the case in hysteria. As the patient improved and the cough disappeared, the convulsive, and not the cough-centre, was excited, and convulsions set in.

But not always can the conditions be as readily explained as in this case. On the contrary, the cough will sometimes persist, with scarcely diminished energy, long after the affection causing it has been improved or cured, and even the most careful search fails to reveal its cause. In such cases we are justified in assuming that gradually the cough-centre has been excited to such an extent that it cannot return to its normal condition. I have observed a few such cases in my own practice, and in one brought about a cure by persistent stimulation of the patient's energy and will-power; in another, not until he had changed his occupation and whole manner of life. Such an observation can be made, not only in patients in whom the respiratory tract was originally affected, but also in those in whom the cough had its cause in more distant parts of the body. Contrary to other authors, and the explanations given by them, I call "nervous cough" only that form which remains after the affection inducing it has disappeared, or which depends upon hysteria without any discoverable lesion. Whether the cough is paroxysmal or continuous, I regard as of no consequence, but only whether a pathological cause can be discovered or not. Though the "nervous cough" is thereby restricted within very narrow boundaries, this is, on the other hand, an advantage, as we are thus compelled to make a more thorough examination of the patient in order to discover the cause of the cough, while it will also aid us in the subsequent treatment of the case. In general medicine the tendency to determine the etiology of diseases has also manifested itself in late years, and in rhinology and pharyngology this is particularly important, as the complaints of the patients are as numerous as they are frequently misleading. But even after we have discovered the location whence the cough is excited, we still must deal with a more or less unknown factor. Although we can determine in some cases the paths along which the irritation is conducted from the periphery to the cough-centre, we are still far from being able to say why the same affection excites cough in one person and not in another. I believe that we are confronted here by the same question which arises when we try to explain the reflex

symptoms dependent upon diseases of the nose. The percentage of patients with nasal affections, suffering from reflex neuroses, is comparatively small, and according to the most careful observers we can explain the development of neuroses only by assuming an increased irritability of the nervous system and a peculiar condition of the paths along which the reflex is conducted. Such persons are of a general neuropathic disposition; they are neurasthenic or hysterical. It is not necessary, however, to assume an affection of the whole nervous system; but there may exist, as Rossbach expresses it, not only a universal, but also a partial neurasthenic or hysterical condition of the nervous system, confined to one or several parts.

If, after these general remarks, we now turn to the diseases of the upper air-passages, in the course of which cough has been observed, we find that it occurs in affections of the larynx, pharynx, rhinopharynx, and nose—in short, the whole upper air-passages. The direct cause of cough varies considerably. In adenoid vegetations of the naso-pharynx, mucus may flow down into the larynx and produce cough; in granulations of the pharynx, especially those situated behind the arcus palatopharyngeus, it may be due to friction; in hypertrophic rhinitis and other affections of the nose, attended with stenosis of the nasal cavities, it is the result of the subsequent mouth-breathing and dryness of the pharynx and larynx. Sometimes cough can be excited by touching various points of the nasal cavities with a probe.

In regard to the various diseases, we have already mentioned the excitation of cough from the larynx as the result of the physiological experiment. I shall therefore not enter upon a description of the affections of the larynx, nor discuss the ulcerative processes occurring in it or in the pharynx, nor speak of the neoplasms, or of the foreign bodies found in these localities, as they are well known to you as the cause of cough. The affections of the uvula, especially the uvula elongata, must also be placed in this category, as they sometimes produce very persistent paroxysms of cough, making amputation necessary.

The following list embraces those affections which have thus far received but little attention as factors in the causation of cough; I mention them in the order of frequency with which they induce this symptom. They are:

1. Adenoid vegetations of the naso-pharynx.
2. Hypertrophic rhinitis, deviations and exostoses of the septum, mucous polypi of the nose.
3. Hypertrophy and chronic affections of the faucial tonsils.
4. Granular pharyngitis.
5. Hypertrophy of the tonsil of the tongue.

If we desire to express in numbers the relative frequency of cough in the affections just mentioned, we may say that it occurs in from two to five per cent. of all cases, wherein my experience agrees with that of other observers. Schaeffer, however, saw hypertrophy of the faucial tonsils produce cough more frequently than granular pharyngitis, his statistics differing from mine in this respect.

It lies beyond the purpose of this paper to enter upon the other symptoms of these diseases, of which cough is one of the rarer ones. I shall confine myself to the surgical procedures necessary in their treatment, and show you the specimens obtained. As regards the methods of operation, I may be brief, in view of the fact that I had the honor of describing some of them, two years ago, before the New York County Medical Association.

Hypertrophy of the tonsil of the pharynx and the adenoid vegetations of the naso-pharynx I operate on with Löwenberg's forceps, an instrument which has undergone many modifications, and of which I show you three different sizes. The largest is intended for adults, the second I prefer for children, and the third was made for an operation on a child two months old. Although it can be performed on sensible and older children without narcosis, I have nevertheless frequently used anæsthetics during the last few years, as a complete removal of the vegetations at one sitting is thereby made possible. The diseased tissue should be removed as completely as possible, and the patient kept under observation for about three or four weeks afterward, otherwise the symptoms may return. I remember two cases, particularly that of a boy, upon whom I operated in the spring of last year, and in whom a careful examination a month later failed to reveal the slightest trace of adenomas in the naso-pharynx. When he returned in the fall from a sojourn in the Catskills his parents again observed restless sleep, and another examination showed the presence of adenoid vegetations, of which three pieces were subsequently removed.

The specimens which I have collected since September, 1888, were taken from 95 children, under fifteen years of age, and 28 adults, 123 patients in all, and are contained in three larger bottles. Of the three smaller ones, one contains three adenomas of unusual size, which were removed from as many different patients, the second vegetations from a girl ten years old, and the third the largest number of adenomas I have ever removed from a single patient (a boy eleven years old).

Nasal cough, no matter whether it occurs spontaneously or follows contact with a probe, is always an abnormal reflex, the natural reaction of the nose to irritation being sneezing. It is difficult, however, to decide at times whether the cough is induced from the nose or not. If we can produce it experimentally—for instance, with the probe—

or if we can cut short an attack with cocaine, the nasal origin of the neurosis is proven. The negative result, however, of an application of cocaine does not prove the contrary, as Schech correctly remarks, because there may be several reflex zones, or the solution may have been too weak to suppress the reflex, or the pathological reflex could not be checked any more. In cases in which the diagnosis cannot be made with certainty the conscientious physician will not undertake operative procedures which are not fully justified—a rule which at present is frequently disregarded. When organic changes have taken place or the diagnosis is readily made, an operative interference is indicated.

As regards the various affections of the nose, in the course of which cough is observed, we can destroy hypertrophies of the anterior turbinated bones with caustics, and particularly with the galvano-cautery. Removal of posterior hypertrophies is more difficult, and is best performed with a snare, which, properly curved, is introduced from in front into the naso-pharynx, the hypertrophy is seized and snared off. When the cold wire of the Jarvis snare is used, the operation must be extended over one to two hours, as the loop can only be tightened very gradually in order to avoid hæmorrhage. Not even the greatest care, however, can sometimes avoid such an unpleasant complication. This circumstance, the length of time required, and the difficulty of preserving the original shape of the snare after introduction into the nasal cavity, on account of the softness of the platinum wire, led me to the construction of my iridium-platinum wire, which I now use exclusively, in connection with Schech's handle, and herewith lay before you. Of the two bottles, the smaller one contains the posterior hypertrophies removed with the cold snare, the larger one those removed with the galvanic snare.

The instruments necessary for trephining exostoses of the septum are a good battery, a motor, a handpiece, and trephines of various sizes and shapes. The specimens removed with them since July, 1888, have generally been taken one from each patient; the smaller bottle, however, contains five pieces of bone, all of which were taken from a woman suffering with complete bony stenosis of the left nasal cavity, and who is now permanently cured. In January of last year I began to operate on suitable cases of exostosis with Bosworth's saw, and, besides a larger number of ordinary shape, removed some of unusual size. For the removal of incompletely detached or wedged-in pieces of bone I use my nasal bone-forceps, which occupies but little space, yet permits of the exertion of great force.

In regard to the next two affections, the diseases of the tonsils and granular pharyngitis, I can be brief, as every physician at present

undertakes their treatment. I would call attention to the fact, however, that not every tonsil must be considered normal which is not hypertrophic, or which on inspection shows nothing abnormal. When the tonsil is drawn out with proper instruments, or, in retching, the median surface becomes visible and a good view of it is obtained, we may then discover in some cases affections of the lacunæ with deposits of concretions, sometimes also of leptothrix, which can produce very disagreeable reflex symptoms and also cough. Their complete removal and, if necessary, the destruction of the tonsil with the galvano-cautery is imperatively indicated. The latter instrument I use almost exclusively in granular pharyngitis, though we must not forget that the lateral pharyngeal bands, which extend parallel to and also behind the arcus palatopharyngeus, generally give the patients more trouble than a few granulations at the middle of the posterior wall of the pharynx.

According to my experience, especially that of late years, hypertrophy of the lymphatic tissue at the base of the tongue—also called the tonsil of the tongue, and by some authors the fourth tonsil—frequently gives rise to vague pharyngeal complaints, the cause of which is often not recognized. This is not the place to enter upon this subject, but a careful examination might trace the complaints of many patients, who have been treated for chronic pharyngitis or paræsthesia or hyperæsthesia with unsatisfactory result, to this source, whereupon proper treatment will effect a cure.

In regard to the cough occurring in this affection, permit me to relate the clinical history of one of many cases, a part of which was reported in my first paper on this subject.¹ To facilitate the understanding of this case, let me briefly repeat the description: A young lady, twenty-eight years old, visited me in 1887 on account of a persistent cough, which had raised the suspicion of a pulmonary affection among her relatives. The lungs having been found normal, her granular pharyngitis and nasal hypertrophies received proper treatment. Their removal, however, did not have the slightest effect upon the cough; and I then began to pay attention to hypertrophy of the lingual tonsil. I found it considerably enlarged, and removed the two halves, separated by a raphe, with the iridio platinum wire, and destroyed the remaining parts with the galvano-cautery. The result was surprising: the cough completely disappeared after the cauterized surface had healed, and I regarded the case even at that time as a very instructive one. Last year my opinion received further confirmation. In the spring of 1889 the patient returned to me, as her cough had again set in. Although I remembered her case very well, I did not succeed at

¹ New York Medical Record, December 17, 1887.

my first examination in discovering any diseased tissue. The next time she came I found, outward and downward at the base of the tongue, a nodule about half the size of a pea, which when touched with the probe caused the patient to cough. Improvement manifested itself after the first application of the cautery, and after the second the cough completely disappeared. A better illustration of the development of cough in consequence of this affection it would be difficult to give.

On a former occasion I discussed at length the therapeutic measures for destroying hypertrophic tissue, and for the sake of completeness I will only say that I mainly use three remedies. They are solutions of iodine-glycerine of varying strength applied with a cotton-carrier, nitrate of silver melted upon probes of the proper curvature, and the galvano-cautery. The last mentioned may be used in two ways. The hypertrophy can be made to disappear by scarifications with the proper electrodes, or, if it is confined to a small space and the tonsil is divided into two parts by a longitudinal depression, the attempt may be made to remove it with the snare. For this purpose I use my iridium-platinum wire, and I have collected specimens from thirteen such patients, some of the larger of which I herewith show you. When the whole mass can be seized and snared off, the same result is obtained with one operation which otherwise would require repeated applications of the galvano-cautery.

Gentlemen, as you will have observed in the course of my remarks, I have been compelled to be more brief than I should have desired, in order to avoid an undue length of this paper. It was not my object to weary you with a description of the details of operative procedures, the proper execution of which can only be acquired by practice. I have endeavored to call your attention to some of the rarer causes of cough, and to the necessity of a careful, thorough examination, the result of which alone will enable us to inaugurate rational treatment upon a sound, pathological basis.

THE LAW AND THE DOCTORS.

BY SIDNEY V. LOWELL.

The Court of Appeals of this State is at present formed into two divisions. The first is the old Court of Judges especially elected to that position. The other or second division is composed of Supreme Court Judges selected for the Appellate Court by the Governor.

The last volume of decisions by the second division contains the record of a case brought by a man named Alberti against the Erie Railroad.

Alberti was a passenger, in July, 1885, on an express train of the Erie road, and was seated in one of the sleeping-cars. His train came into collision with a partially displaced door of a passing freight car, which broke the windows and the partition between them, at which Alberti was sitting. He was struck by the broken pieces of glass and woodwork and so injured that the muscles of his legs contracted, drawing them up against his body and rendering him helpless. Two points interesting to physicians occurred in the case.

It seems that Alberti lived in a village in Orange County in this State. He was treated by the physician of the little place, who also called in other practitioners of adjoining villages. The first doctor had never had such a case. The others had had a little experience in such cases, but were by no means specialists as to the trouble. It was some time before a specialist from New York City was sent for, at the suggestion of the village doctors, then at their wits' ends. The defence called a number of leading city physicians and proved that if such treatment as they would have presented had been given earlier, the injury would not have been so serious. The Company then claimed that it was the duty of the injured man to have secured such proper attendance. The court divided on the question whether Alberti could prove that he was a poor man, in order that the jury might infer that he had not the means to send for a city doctor skilled in his trouble. Four judges voted that he was entitled to give such proof, on the ground that it was proper to show that he had not been negligent—that is, that he had done the best his means allowed, against the Chief Justice and another who voted the other way, Judge Brown, of Orange, well known here, not voting.

It was also objected by the lawyer for the Railroad Company, that the doctor who had first treated the injured man could not be allowed to disclose any information which he acquired in attending his patient. Upon this objection being made, the plaintiff's lawyer said, that he waived the benefit of that rule of law. The objection was then overruled. The Railroad Company on appeal claimed that the lawyer of a party could not make such a waiver; that it was so personal a matter that no one could speak for him; that he could only act through his own speech or hand. The court held without dissent that the attorney of a client suing in his own behalf could make such a waiver in the course of a trial, the court intimating, however, that in the case of a suit by the representative of a deceased party, that the power to make the waiver would have died with the deceased.

CHRONIC PACHYMENINGITIS.

BY E. H. WILSON, M.D.

Read before the Brooklyn Pathological Society, March 31, 1890.

Emidio Di Domenino, twenty-two years of age, single, a native of Italy, admitted February 28th. He spoke neither English nor German, and even to an Italian interpreter he was unable to give any account of himself. The only symptoms of which he complained were pain in the abdomen in the region of the spleen, and headache. He was semi-comatose, had external strabismus, tetanic spasm of the voluntary muscles, especially those of the upper extremities and neck, no œdema, temperature subnormal, respirations slightly hurried and very irregular, secreted no urine, bladder empty, very tight stricture in the membranous urethra. Nothing could be made out in the heart or lungs, increased area of dulness in region of left kidney and spleen. Spleen could be felt in front. He continued to complain of the pain in the abdomen and of the headache for two or three days, after which answers to questions could be obtained. He had no rise of temperature. He continued also to have the tetanic spasms, and these became very marked, especially in the muscles of the neck. He would breathe hurriedly for a few respirations, his eyes would diverge, the muscles of the neck and arms would twitch convulsively, then the neck would become rigid and the respiration would stop for about thirty seconds; then, with a long inspiration, the spasm would relax and the neck become flexible. Matters went on in this way, continuing to get worse, and four days after his admission he died. The Sister who was attending to him at the time of his death says that he died in one of these spasms.

Autopsy twenty-four hours after death.

Head: An old wound of the scalp, about the size of a ten-cent piece, was found in the right frontal region; wound completely cicatrized. There was an old depressed fracture of the skull under this scar; the depressed portion was very small and smooth. Dura mater generally much thickened; over the left frontal lobe the dura mater was about one-quarter inch thick and very hard. This thickening gradually grew less marked toward the median line and backward. The most marked thickening was on the side opposite to the old fracture. Left frontal lobe slightly compressed by the thickened dura. The thickened portion was, in some places, of the ordinary fibrous hardness; in others, of cartilaginous hardness and appearance. Brain normal.

Thorax: Heart normal. Lungs normal.

Abdomen: Liver large, mottled yellow and brown, evidently fatty. Spleen normal size, but surface dull, translucent, of a waxy appearance. Kidneys: Left kidney weighed one and three-quarter pounds; completely honeycombed with cavities containing pus; no visible kidney tissue. Right kidney in the same condition as the left; weight, one and one-half pounds; filled with cavities containing large quantities of pus. Ureters not dilated. Bladder showed evidences of old cystitis. Very tight stricture in the membranous portion of the urethra. Beginning peritonitis in left iliac fossa. The small quantity of urine which was found in the bladder was thick with pus.

DISCUSSION.

Dr SCHMIDT remarked that there were present typhoid symptoms, including the dry furred tongue and sordes. He passed *no* urine during the four days he was in the hospital; was sick about twelve days.

Dr. ECCLES.—There were uræmic symptoms present, and there was no water in the bladder. Did Dr. Schmidt say there was tenderness on both sides?

Dr. SCHMIDT.—No; only on the left side. It was difficult to get any connected history. He had no relatives here, and even the Italian interpreter could get little information from him.

Dr. SHAW.—It is very difficult to tell how much the symptoms were due to uræmia and how much to the meningitis resulting from the fracture. Has the specimen been examined microscopically?

Dr. SCHMIDT.—No.

Dr. SHAW.—I think if it be examined it will show that it is a syphilitic pachymeningitis, and I suppose the condition of the kidneys may be accounted for in the same way.

Dr. SCHMIDT.—He had a few spots on his chest, but it was thought they were an accompaniment of the typhoidal symptoms.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

The Annual Meeting of this Association will be held in Denver, Colorado, September 2d to 4th. The programme includes a paper by Dr. B. F. Westbrook, on "The Physiology and Pathology of Breathing."

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EDITORIAL.

PROGRESS IN MEDICINE.

We regret to announce that Dr. A. H. Buckmaster has been compelled, by the pressure of duties incidental to his removal to New York, to terminate his connection with the JOURNAL. We wish the doctor success in his new field of labor. The abstracts in the department of Gynæcology will be hereafter contributed by Dr. Walter B. Chase, who needs no introduction to the profession of Brooklyn.

MEDICAL LEGISLATION.

The year 1890 has been prolific in the production of new and amended statutes of interest to the medical profession of the State of New York. Whether they will be of as much benefit remains to be seen. It is sincerely to be hoped that, unless grave errors are discovered in them, they will be permitted to remain without alteration or amendment long enough for physicians and students to become familiar with their provisions. One of the greatest curses of our country is the continual tinkering with legislation, and in this regard the practice of medicine is not neglected.

The Legislature of New York passed, at its last session, three important laws regulating, directly and indirectly, the practice of medicine. We shall publish these laws in full when our space permits.

The first law, Chapter 499, provides for the preliminary education of medical students. It is an amendment to the Act of 1889, and is

much broader in its exemptions from examination than was that act, practically conferring upon the Regents of the University of the State of New York the power to determine what qualifications shall be regarded as sufficient.

The second act, Chapter 500, is an amendment to the Act of 1887, which regulated the licensing and registration of physicians and surgeons. It takes from the medical colleges the power to indorse the diplomas of those who graduated without the State, and places it in the hands of the Regents of the University on the recommendation of a legally constituted board of medical examiners. This indorsement cannot be made until the applicant presents evidence that he has complied with the provisions of Chapter 499, to which we have already referred. In other words, it imposes on those who come into the State to practise the same conditions that are imposed on the students of its own colleges.

The third act, Chapter 507, is an entirely new one, and establishes Boards of Medical Examiners of the State of New York for the examination and licensing of practitioners of medicine and surgery; and further regulates the practice of medicine and surgery. This law does not go into effect until September 1, 1891.

This act first provides for three separate Boards of Medical Examiners: one representing the Medical Society of the State of New York, one the Homœopathic State Medical Society, and one the Eclectic Medical Society of the State. The Regents appoint from a list of nominees submitted by the respective societies. Examination questions are to be prepared by these boards, and the answers made by the candidates for examination to such questions as may be selected from these lists by the Regents shall be submitted to the boards for their determination as to their sufficiency. If successful, the candidate receives from the Regents a license to practise. After September 1, 1891, no one not already authorized to practise in this State can do so without this license, and this will only be granted on the following conditions: 1, payment of \$25; 2, evidence that the applicant is more than twenty-one years of age, is of good moral character, has obtained a competent common school education, and has a diploma; 3, that he has studied medicine three years, including three courses of lectures in different years; and 4, after an examination by one of the State Boards of Examiners.

The existing law, by which medical colleges can grant diplomas after three years of study and two courses of lectures, is not altered, but those who desire to practise in this State must attend *three* courses of lectures.

We have endeavored to give the salient points in these new laws, but have necessarily omitted many details.

OBITUARY.

SIR EDWIN CHADWICK.

By R. M. WYCKOFF, M.D.

The beautiful pilgrimage of Chadwick's life has been completed. His friends know him best as "the father of English sanitation," but his name has seemed to us to merit an embalming in these pages by reason of his hearty relations with our own profession. Although trained to the law, Chadwick was more in his element with medical men than with any other body of his compatriots. He was an honorary member of the British Medical Association, and only a short time before his death received from a medico-legal society in America a similar recognition of the wholesome influences of his life work.

It is not possible here to give in detail the long list of sanitary questions which engaged this great mind, dating back nearly a half century. His career was one of untiring labor and unalloyed usefulness, and his memory must remain for many long years as that of one of the greatest, yet least recompensed, benefactors of his time and country. It has been aptly observed of him that, had he as a military man succeeded in destroying one-hundredth part as many lives as he was prominent in assisting to save, his statue would have been erected long since in more than one great city of his native land, and he would have been loaded with honors and titles. But as it was, it was not until he had attained his ninetieth year that the painfully inadequate badge of knighthood was doled out to him. But his mind was large, as was his dome-like, capacious brow, and though he endured, he did not languish under, the shadow of official displeasure and retirement that continued through a long series of years. To those who have looked upon any faithful portrait of this noble man, it does not seem at all strange that his years were given to great and philanthropic themes, such as he was in the habit, from time to time, of bringing in clear and convincing language to the public attention. He was, in fact, a kind of amateur Minister of the Public Health at Mortlake, in Surrey, with a portfolio replete with unofficial state-papers. This idea of an imperial ministry of the public health was a favorite one with him, and he has, in that respect, sown the seed of a philosophic, beneficent thought which must eventually find fruition: perhaps under hands that may not deal with it so wisely as he might have done if his own generation had been sufficiently advanced to have listened to him.

Chadwick was ahead of his time, and was compelled to expend much of his energy in endeavoring to lift people up to a level where they could get a glimpse at principles and measures of sanitation that were to him clear and cogent as the light of day. To him the value of human life, and many of the means of its protection, were of the nature of self-evident propositions.



PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular monthly meeting of the Medical Society of the County of Kings was held at the Society rooms, 356 Bridge Street, Tuesday evening, June 17, 1890, at 8 o'clock. Dr. Chase in the chair.

There were about 100 members present.

The minutes of the previous meeting were read and approved.

The Council reported favorably upon the following applicants, and recommended that they be elected to membership :

Drs. Benjamin F. M. Blake, Frederick K. Priest, Joseph P. Warbasse, George Dominguez, J. F. Kuhn, R. C. Brewster, and Henry Wallace.

In regard to the application for membership in the Society of persons who are graduates of medical schools other than regular, the Council reported that the following resolution had been adopted at the May meeting :

Resolved, That it is the sense of this Council that it is not advisable to admit to membership in the Society graduates of other than regular schools of medicine, or such practitioners the admission of whom would cause schisms in the Society.

The above report was accepted and adopted as read.

The following, having been regularly proposed and favorably reported upon by Council, were declared elected to membership :

Drs. Franklin P. Miller, John F. Kent, Z. F. Dunning, Paul Heuser, Henry Alderton, Wilioughby I. Wood, and William C. Schirmer.

The Chairman announced the death of Dr. Melia, who was an applicant for membership in the Society, and whose name had been favorably passed upon by Council, and suggested that it would be proper and in order to suspend the by-laws in order that a two-third vote might be taken to elect Dr. Melia a member of the Society and have his name placed on the rolls.

On motion, duly seconded and carried, it was so ordered, and Dr. Bodkin was appointed a Committee of One to draft a suitable memorial of Dr. Melia.

The President announced the death of Dr. Wales L. Cary, and on motion the following Obituary Committee was appointed, to report at the September meeting. (Committee) Drs. Wallace, Van Cott, and Jeffrey.

On motion of Dr. Kretzschmar, it was

Resolved, That a Committee of Five be appointed to consider the advisability of requesting the Commissioners of Charity to appoint a Board of Visiting Physicians and Surgeons for the County Hospitals in Flatbush, so that the medical profession of Kings County can have a representation in the management of the same; said committee to report back to the Society some plan for carrying out this purpose, upon receipt of which the Society can confer with the Board of Charities Commissioners, with a view of accomplishing the desired object.

Under the above resolution the chair appointed the following committee: Drs. Pilcher, Kretzschmar, Fowler, Bellows and Bogart.

The following applications for membership were presented:

Dr. Chas. G. Krehler, 323 South 5th St., Coll. P. and S., N. Y., 1882; proposed by Dr. James L. Kortright; Wm. M. Hutchinson.

Dr. R. P. Crandall, U. S. Naval Hospital, Univ. of Pa., 1887, proposed by H. W. Rand; Chas E. De La Vergne.

The Chair stated that the Committee on General Medicine would report in September, and the Committee on Surgery in November.

SCIENTIFIC BUSINESS.

The first paper of the evening was a brief note on "Episiotomy," by Dr. Charles Jewett, which was read, and discussed by Drs. Bartley, Wallace, Kretzschmar, Chase and Emory.

The second paper, by Dr. E. H. Bartley, entitled "Rapid and Easy Method of Determining the Amount of Urea and Sugar in Urine," was read and demonstrated, and discussed by Drs. Jewett and Hutchinson.

Dr. Bartley also gave a brief talk upon the subject of "How Babies Shall be Fed," and presented two sample milk-cans, which were suggested as the best form in which to deliver sterilized milk to the consumer; and stated that they should make an attempt to have the sterilized milk placed on the market in such cans as the ones exhibited.

Dr. Henry Conkling read a paper, entitled "The Heart in Diphtheritic Paralysis," with report of a case.

On motion, the meeting adjourned to the third Tuesday in September, 1890.

W. M. HUTCHINSON,
Secretary.

BROOKLYN PATHOLOGICAL SOCIETY.

The 314th regular meeting of the Brooklyn Pathological Society was held at the Society Rooms February 13, 1890, Dr. R. G. Eccles, Vice-President, in the chair.

Dr. Wilson presented a specimen of "Abscess of the Brain."

In the discussion, Dr. H. Messenger Ayres said: I was looking over the records of some cases which came under the care of Dr. Daniel Ayres, and found the following history of a case:

The patient had headache and bilious fever, from which he recovered; had a similar attack one month later; persistent pain over left supra-orbital region. On consultation, it was thought to be periostitis, and an incision was made down through the periosteum. An abscess formed in wound, and in healing left a large scar.

There were still paroxysmal attacks of pain, persistent; irregular, occasional vomiting and vertigo; memory and brain functions were apparently normal. His condition remained about the same until his death. On the night of his death he had eaten a light supper, retired early, and in the early morning suffered one of the worst paroxysms of pain he had had, and cried out: "Something has given away." The autopsy proved that there had. There was found a pus cavity in the left anterior cerebral hemisphere, communicating with the anterior ventricle, pus greenish, tissue softened around the abscess, otherwise normal.

There is one point I wish to make. He complained of a radiating pain all over the side of his head, neck and shoulder.

Dr. OSGOOD.—A man had been kicked by a horse, suffering a compound fracture of the skull, quite extensive.

I saw him three months later, and he said he had been operated upon after the accident, and a piece of bone removed, 1 by 1½ inches.

He was suffering from headache, nothing else, and nothing to call attention to himself except the headache. Diagnosis of the case was not made at that time; he was treated for his headache. One morning he spoke of himself, saying he had not felt better for some time; went to bed, and in one-quarter of an hour died.

Autopsy revealed dura mater adherent to scalp at seat of injury. Beneath the dura was a capsulated abscess, some softening around it, and the portion nearest the ventricle had ruptured, discharging its contents into the ventricle.

Dr. BAYLES.—I wish to state a case which I saw at the New York Hospital. Dr. Wilson states that in his case there were *no* symptoms of pressure nor paralyses, no indications of abscess. In this case I

wish to relate there was every symptom of an abscess, and none was found.

A year and a half before coming under my observation he fell from a ladder; was taken to Presbyterian Hospital. Previous to his fall he had been good-natured, now was irritable, and developed epileptical attacks; was treated with bromides, and finally discharged from that institution.

Epileptic attacks again increased in frequency; came to New York Hospital; was irritable, stupid, drowsy, with a well localized pain at seat of former injury. Dr. Markoe and staff suspected that it was an abscess in the brain. Head was shaved. Dr. Markoe thought he could feel a depression at seat of injury; there was inequality of the pupils; all special senses fogged, and an epileptic attack every day.

So an operation was decided upon, Dr. Markoe operating. An incision made revealed *no* depression, still it was thought an abscess would be found; trephine used; button of bone removed; dura was normal; no signs of abscess; wound sutured.

Patent felt better next day, and we thought we were going to have a favorable case; but the next day he had a chill, followed by fever, and finally death.

Autopsy revealed *acute* meningitis; *no* evidence of fracture, abscess, or any injury to the brain.

Dr. FEARN spoke of a case in which autopsy revealed an abscess. The man was struck by a brick thrown at him; skull was fractured, the line of fracture running nearly around the skull. He took out three inches of temporo-parietal bone.

There were inflammatory symptoms at the seat of injury, but no evidence of abscess from time of injury till the patient died.

Dr. WILSON.—I cannot say what caused the death of the patient whose case I presented.

I have watched the progress of two cases of abscess which ran along for a long period of time before death ensued. One of these, on whom Dr. Delafield made the autopsy, had been struck by a ruler; the abscess involved the gangliæ.

Dr. Wilson next presented a microscopic specimen of bacteria found in the nasal secretions in influenza.

Dr. FEARN was much interested in the paper, and stated that he had been able by the use of boric acid as a snuff to relieve the sneezing and headache which accompanied the onset of the nasal symptoms. In his own case he experienced relief in five minutes after using it.

Dr. ECCLES said he believed that antiseptic remedies gave best results. He noticed that the epidemic consisted of all degrees of severity from the mildest to the most severe. He had frequently

observed this in epidemics of scarlet fever, some cases so mild that the only symptoms were nausea and headache: so with influenza; some very slight, others with violent muscular pains, bursting headache, severe diarrhœa, and peritonitis. Man is like a wagon; you can't tell when he will break down.

Dr. WILSON asked if any had cases of *pneumonia following* attacks of influenza; he was interested to know, because he found so many of the diplococci resembling the pneumococci of Frankel.

Dr. WRIGHT states that in the normal nasal secretion there are *no* streptococci, while in this specimen nearly all were streptococci.

The Society then went into executive session. There being no business to be transacted, the Society adjourned.

FREDERIC J. SHOOP, M.D.,
Secretary.

At the 315th regular meeting of the Society, held March 13, 1890, the report of a case of Alcoholic Paresis was presented by Dr. Schmidt.

Jacob Wagner, twenty-eight, barber; admitted in St. Catherine's Hospital, February 8, 1890. *Previous history* of having consumed large quantities of alcoholics, had gonorrhœa but no chancre. Three weeks ago he noticed, while shaving a customer, that his hands felt numb and the power of extensors was impaired. This wrist-drop continued to get worse, and he began to have sharp lancinating pains in his hands and feet.

On admission, wrist-drop was very marked, slight loss of power in hands and feet, much wasting of muscles of the forearms and arms, *no lead line*, mental faculties clear, urine normal, heart and lungs normal, temperature 101°, pains in hands and feet very severe; complete loss of power in extensors of the hands and arms; loss of power in extensors of feet; patellar reflex gone.

Electric contractility of flexors of the hand diminished, but well marked; extensor muscles would not respond.

February 22d: These symptoms continued to grow worse. He developed œdema of the hands, the feet and penis, œdema of the lungs, with dyspnœa and ascites. Experienced great difficulty in passing urine, which was diminished in amount but contained no albumen.

Patient now became very weak, and finally died.

Dr. Shaw saw the case and expressed the belief in its being one of alcoholic paralysis, complicated probably by a cirrhotic liver.

The following is the report of the post-mortem examination as far as we were permitted by the family to proceed with the investigation:

J. W., twenty-eight years, barber. Post-mortem examination as far as permission has been given :

Body : Emaciated, abdomen distended.

Heart : Not examined.

Thorax : Right pleural cavity filled with clear serum ; right lung collapsed ; left lung normal. Heart normal, slight adhesion of aorta.

Abdomen : Filled with clear serum, parietal peritonæum congested, thickened, covered with small translucent nodules, size of a pin's head. A large nodular mass occupying the position of the omentum extended along the middle of the abdomen ; this mass was hard, congested, coarsely nodular, and was attached above to the transverse colon. The peritonæum of the posterior portion of the abdomen was also studded with small nodules.

Liver : Markedly cirrhotic, hob-nail, very hard and dense, and of a yellowish and white mottled color.

Spleen : Of large size.

Kidneys : No marked change.

Stomach : Normal.

Spinal cord : Membranes somewhat thickened, cord slightly congested ; no lesions visible to the naked eye.

The cord, median, ulnar and posterior tibial nerves were reserved for microscopical examination. The gastrocnemius muscle was of a light yellow color, and did not look at all like muscular tissue, the arrangement of the fibre could not be seen, and oil oozed from the cut surface.

Microscopical Examination.—Gastrocnemius muscle : The muscular fibres are almost completely replaced by fat, a few scattered fibres can be seen here and there, and have for the most part lost their striated appearance, and are infiltrated with and degenerated into adipose tissue.

Peripheral nerves : Median and ulnar nerves show to a moderate degree the lesions of peripheral neuritis, the myelin is broken up into blocks and contains fat globules.

The posterior tibial nerve shows to a very marked degree the lesions of peripheral neuritis ; the myelin stains in small particles, like a row of beads, and contains many small globules.

Axis cylinder intact.

Spinal cord : Not yet examined.

The heart was normal. The dyspnœa appeared to be caused by œdema of the lung and by ascites. I diagnosed the case as one of alcoholic paresis, and thought the ascites due to cirrhosis of the liver, also thought there was peripheral neuritis.

Neurosis of the pneumogastric nerve is apt to cause fainting spells.

The carcinomatous growths found might have helped to produce the ascites, but the real cause was probably the cirrhotic condition of the liver. His intense pallor would suggest lead poisoning, but there was found no lead line.

There being no further business, the Society adjourned.

FREDERIC J. SHOOP,
Secretary.

BROOKLYN DENTAL SOCIETY.

The annual meeting of the above Society was held at the rooms of the Kings County Medical Society on the evening of the 23d of June.

The following officers were elected for the ensuing year :

President—E. T. Rippier. Vice-President—B. A. R. Ottolinguì.
Rec. Sec'y—Louis Shaw. Cor. Sec'y—F. W. Moore. Treasurer—
F. C. Walker. Librarian—J. A. Meara.

The newly-elected President was escorted to the chair, and in an address thanked the Society for the honor conferred upon him.

He also appointed the following committees for the year :

Executive Committee.—Wm. Jarvie, Jr. ; O. E. Hill ; W. A. Campbell.

Ethics.—J. P. Geran ; M. E. Elmendorf ; M. L. Thompson.

Subjects.—Will H. Johnston ; A. H. Brockway ; L. G. Wilder.

Membership.—H. G. Mirick ; C. D. Cook ; C. B. Parker.

Clinics.—B. A. R. Ottolinguì ; J. J. Pitts ; S. F. Cook ; R. C. Brewster ; R. T. Holly.

PROGRESS IN MEDICINE.

SURGERY.

BY GEO. RYERSON FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

STERCORAL INTOXICATION.

Verneuil (*Gaz. des Hôpitaux*, 1889, No. 133 ; *Centralblatt f. Chirurgie*, No. 13, 1890, p. 237). In the course of a lecture delivered to the students upon the occasion of his installation to the professorship of surgery at the Hôtel-Dieu, V. pointed to the advantages which surgery had derived from modern bacteriology, and in the course of his remarks took occasion to refer to what he deemed his recently-discovered intoxicating influence of retained *fæcal* accumulations. Observations made by Velpeau called attention to the fact that the fluid contained in the

sac of an incarcerated or strangulated hernia produced an irritating effect upon the hands of the operator. Others have observed that the entrance of fluid from such a sac into the abdominal cavity gives rise to peritonitis without there having necessarily been an injury to the intestine. Clado discovered bacteria in such fluids, and inoculation of animals with the same produced rapid death with symptoms of violent intoxication. This is called by V. "stercoral intoxication," and he claims that the bacteria of Clado give rise to the disease.

FRACTURE OF THE PATELLA.

Lucas Champronière (*Gaz. des Hôpitaux*, No. 19, 1890). The author is an unqualified advocate of the operation of suture of the patella following fracture. He follows Lister and Cameron in advocating free opening of the point and suture by means of silver wire. Of 14 cases thus treated, 4 were old fractures, 9 were recent fractures, and 1 was a refracture in which the original fracture was treated by bandaging. In the 9 recent cases the operation was done between the first and 12th day; the author asserting that the earlier the operation is performed the better. The author drains the parts during the first eight days, and places the limb in a splint. Thereafter any source of mobilization is removed, and slight movements of the limb are encouraged. The patient is allowed to step upon the limb three weeks after the operation.

(In view of the recent researches and experiences of Riedel in rupture of the upper recess of the synovial cavity of the knee-joint and extravasation of synovia and blood in the intermuscular spaces, complicating fracture of the patella, some caution could be profitably employed in following the advice involved in the observation that "the earlier the suturing is done the better."—G. R. F.)

THE TREATMENT OF SOFT GOITRE BY MEANS OF PARENCHYMATOUS INJECTIONS OF IODOFORM.

V. Morsetig-Moorhof (*Wiener med. Presse*, 1890, No. 1; *Centralblatt f. Chirurgie*, 1890, No. 21). The author recommends injections of iodoform. He has treated every case of this variety of the disease coming under his notice by this means during ten years, and without exception favorable results have followed its employment. The injections should be made under the strictest antiseptic precautions. From 1 to 2, and at the most 4 grammes of the following solution should be employed at each sitting:

R	Iodoform,	-	-	-	-	1.0
	Ether,	-	-	-	-	5.0
	Ol. Olives,	-	-	-	-	9.0
	or,					
R	Iodoform,	-	-	-	-	1.0
	Ether,					
	Ol. Oliv.,	ââ	-	-	-	7.

The solution should be freshly prepared, of a light yellow color, and transparent. The injections should be made at intervals of from three to eight days, from five to ten injections being required according to the size of the tumors. But slight reaction is said to follow each injection, as a rule. The ultimate result of the case is not reached with the final injection, but the resorbent influence of the iodoform remains active for a long time; the primary reduction continues after discontinuance of the treatment until a cure results.

SUTURE OF CLEFT-PALATE WITHOUT DIVISION OF THE MUSCLES.

Julius Wolff, Berlin (*Centralblatt f. Chirurgie*, No. 25, 1890). In operations upon the soft palate it has heretofore been deemed of the greatest importance to provide against tension upon the parts by myotomy of the lateral palatine muscular structures. Contrary to the teachings of Dieffenbach, Fergusson and Langenbeck, W. declares that the structures comprising the soft palate are the most elastic in the entire organism, and by virtue of these qualities section of the muscles may be dispensed with. He operates as follows: Incisions are made in the usual manner in the hard palate along the alveolar border, to the posterior boundary of the latter. The muco-periosteal structures of the hard palate are now carefully loosened, first from the surface of the mouth and from the edges of the cleft in the hard palate, then from the posterior edge of the horizontal portion of the bony palate and from the neighboring pyramidal processes of the latter, in so far as may be required in order to approximate properly and easily the edges of the cleft in the median line, where they are sutured in the usual manner.

Since October, 1889 (less than a year), W. has operated ten times in this manner, and with uniformly favorable results. In not a single instance was there performed section of the muscles. In these cases there occurred an improvement in the speech considerably in advance of that which follows ordinarily, and this is attributed by the author to the fact that the muscular structures were not interfered with. Even in Billroth's procedure (chiselling off of the pterygoid process) there is some interference with the muscular attachments, which, according to W., may be avoided by the method herein suggested.

A NEW METHOD OF TREATMENT OF PNEUMOTHORAX FOLLOWING PENETRATING WOUNDS OF THE CHEST WALL.

O. Witzel, Bonn (*Centralblatt f. Chirurgie*, No. 28, 1890). Attention is called to the extreme dangers arising from attempts to remove the air from the cavity of the chest in this class of cases on the one hand, and the risks of setting up suppurative inflammation, should it be permitted to remain, on the other. W. recommends the following course: A large male rubber catheter is passed into the wound and

the latter firmly sutured about the same until the opening is both air and water tight, with the exception of a point left open for the escape of the air. The catheter is connected with the nozzle of an irrigator, and the cavity of the chest slowly filled with a weak boric acid solution, of the temperature of the body, the air escaping from the point of opening above mentioned. By lowering the irrigator, after the chest is filled and the air ceases to escape, the fluid is siphoned out, the air exit being at the same time held tightly closed and the catheter removed, while a number of temporary sutures, previously placed upon either side of the catheter, are drawn tightly together and tied.

OLD FRACTURES OF THE PATELLA.

M. Chaput (*Thèse de Paris*, 1889; *Centralblatt f. Chirurgie*, No. 18, 1890). The author makes five divisions of this class of cases :
1. Consolidation of the fragments by bone or a short fibrous tissue connecting band. 2. Consolidation by bone or a short fibrous connection, and considerable lengthening of the patella. 3. Cure, with a short but easily stretched fibrous connecting band. 4. Cure with a fibrous connecting band from two to four cm. long. 5. Cure with a fibrous connecting band from five cm. long and upwards.

The treatment of these various types will depend not so much upon the particular anatomical conditions found as upon the amount and kind of functional disturbance present. During the first year following the injury, the author insists upon the use of baths, douches, massage and electricity, to the exclusion of operative measures. Should the extension be interfered with, bony suture should be employed. In case of interference with flexion the treatment must be directed according to the particular injury which governs the functional disturbance. In the fourth division, according to C, the removal of the upper fragment will be a rational procedure, as well also as in those cases in the second division in which fibrous union has occurred. In cases in which bony union has taken place, and in which also extension is interfered with, removal of the entire patella is recommended. In the third division only extension is interfered with, and the question of bony suture will only arise. That the extirpation of the entire patella does not interfere materially with the function of the limb has been shown by C. by a series of experiments upon dogs.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

UNIQUE CASE OF EXTRA-UTERINE PREGNANCY.

Macquibban (Br. Med. Jour., April 26, 1890) reports a case of extra-uterine pregnancy in which the fruit sac at the fourth month lay behind the uterus firmly adherent to its posterior wall and extended symmetrically beyond it on either side and two or three inches above it. The abdomen was opened by Prof. Ogston. In front of the tumor was found the bladder overdistended and reaching to the umbilicus notwithstanding the fact that two and a half pints of urine had been drawn off with a catheter immediately before the operation. The abdomen was closed and the ovum punctured through the posterior vaginal fornix. The fœtus was removed, the placenta left undisturbed and a drainage-tube inserted. The cord and placenta came away on the third day. The patient recovered.

THE ACTION OF ANTIPYRINE UPON THE PARTURIENT AND THE PUERPERAL UTERUS.

Pinzani (Arch. d'obstet. et de gyn., March, 1890) reaches the following conclusions based upon a careful study of the literature of the subject and a series of observations upon the parturient and the puerperal patient:

1. Antipyrine given during the labor, in stomach doses of forty-five grains, or in hypodermic doses of fifteen to twenty grains, impairs the contractility and retractility of the uterus. The effect of the drug begins within a half hour after its administration and reaches a maximum during the second and third half hour when exhibited hypodermically, during the fourth and fifth when given by the mouth. The influence of the drug upon the uterus is greater in proportion as the dose is large and its administration early in the labor.

2. The use of antipyrine in therapeutic doses during the puerperium also weakens the action of the uterus in proportion to the dose employed.

3. Antipyrine has the power to diminish for a brief time the pain caused by the contraction of the uterus, either during labor or the puerperal period.

The author submits that the evil effects of the drug in the parturient or puerperal condition are hardly compensated by its advantages.

EAR PRESENTATION.

Garrigues (Am. Jour. Med. Sci., June, 1890) reports a case of ear presentation. The patient was a multipara. The presenting part

comprised the left ear and the corresponding parietal bone, occiput to the mother's left. The uterus lay in right obliquity, as shown by the situation of the foetal heart. The patient was placed in the Sims position and the body of the child pushed well to the left. By this manipulation, together with pressure upon the head, the posterior fontanelle was brought down into the excavation. The further progress of the labor was normal.

By inclination of the head toward one shoulder either the anterior or posterior ear may present, yet these presentations are not mentioned in most obstetrical works. They may be termed respectively anterior and posterior ear, or anterior and posterior parietal presentation. Version may be required when the malposition cannot be corrected, as was done in the foregoing case.

DURATION OF PREGNANCY.

Olshausen (*Annals Gyn. and Pæd.*, May, 1890). The German civil code limits the period for living children to that between the one hundred and eightieth and the three hundredth day of gestation, both inclusive. Olshausen observes that if by a living child is meant one capable of breathing, the lower limit fixed by the code is too large, since children of one hundred and sixty days are susceptible of respiration. If by the term living child is meant a viable child, the limit of one hundred and eighty days is too short, for the child is not viable till the one hundred and eighty-ninth day or later. Again, for the upper limit three hundred days is too short, for pregnancy has often continued three hundred and twenty days or more. Hohl, Matthews Duncan and Kröche have fixed the extreme limits at three hundred and thirty-six, three hundred and thirty-five and three hundred and thirty days respectively.

VOMITING OF PREGNANCY.

The following remedies have recently been added to the list on good German authority: Resorcine in powder in daily doses of eight to forty grains; menthol, one-third grain hourly in alcoholic solution, given diluted with water.

EXTRA-UTERINE PREGNANCY.

Engelmann (*Annals Gyn. and Pæd.*, May, 1890). Engelmann was formerly a partisan of electricity for the treatment of extra-uterine gestation in the early months. A recent experience at the hands of a medical friend has led him to modify his views, and he would now restrict that agent to cases in which the diagnosis is doubtful, if it is to be used at all. In the case referred to, rupture occurred in the first month and the patient died before medical aid could be had. The specimen was examined after death by Dr. E. He remarks that the diagnosis could not have been made with certainty clinically,

as no period had been missed and the patient presented practically no evidence of the real condition of affairs. Since a pregnant tube may rupture at any, even the earliest period, he concludes that any but surgical treatment in a case of ectopic gestation endangers the life of the patient. He favors exploratory incision if merely a suspicion of such a condition be entertained after careful examination, during narcosis, by an experienced gynæcologist.

[The reasons for the doctor's conclusions are not altogether plain. Cases like the one cited, in which the diagnosis is impossible, are not likely to secure the benefit of any method of treatment. If he means to show that in any case the tube may be so thin that rupture may take place at any moment, we grant that is true, but is nothing more than is generally recognized by the partisans of either treatment. Even when rupture is imminent fœticide by electricity at a single sitting is quite as safe in the early months as a laparotomy at the hands of an expert, certainly more so than laparotomy by the general practitioner inexperienced in abdominal surgery.—J.]

CONTRIBUTION TO THE STUDY OF THE OBLIQUE OVATE PELVIS WITH
ANCHYLOSIS.

Tosentino (*Arch. d'obstet et de gyn.*, March, 1890). The principal conclusions are as follows :

The ankylosis is the result of an inflammation of the sacro-iliac joint and is observed in every case of oblique-ovate pelvis.

Inflammation, even with a normal development of bone, if ankylosis takes place, produces an oblique-ovate deformity of the pelvis.

The obliquity, the narrowing of the pelvic canal, the flattening of the lateral walls, the lumbar scoliosis, are the result of the displacement of the bone under the influence of the unequal pressure to which the two lateral halves of the pelvis are subjected in consequence of the re-establishment of the equilibrium.

In this deformity the diagnosis may be confirmed by the history of bony affections in youth, promontory within easy reach, posterior-superior spine on one side nearer the sacral crest than that of the other side, scars in the vicinity of the posterior superior spine.

Narrowing may be detected and its degree determined by the method of Moegele.

In presentation of the vertex the position is most favorable when the occiput is turned toward the shortest side.

According to the degree of contraction the treatment may be forceps, induction of premature labor, or Cæsarian section.

Version should not be done unless indicated by accidental complications. Craniotomy is restricted to the dead fœtus.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M.D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

ON CREMATION.

Sir Henry Thompson, in his capacity as president of the English Cremation Society, has contributed papers from time to time on the subject of cremation. In an article published some time since he gives an exhaustive history of the subject, and suggests certain methods by which its use may become more common. Cremation may be urged on the ground of sanitation. By the complete destruction of the body in a short time, the conversion of the animal tissues into a harmless powder, the slow decomposing changes which take place in the soil, following burial, by which all neighboring water may become contaminated, by which also poisonous materials may come to the surface and act in certain ways by infection, are prevented.

It is stated that the first cremation took place in 1874 in Breslau. Other cremations followed. The number cremated in Milan with the year ending in December, 1886 was 463.

In England the first cremation was performed in 1882. Legal difficulties were encountered, but in 1885 the opinion of one of the judges was obtained, which stated that "cremation was legal if it be effected without nuisance to others."

The English crematories are at Woking. The buildings present a handsome appearance. There is a chapel forty-eight feet long by twenty-four feet six inches wide. Back of this is the furnace. The cremation is accomplished without escape of smoke. There is no odor. The resulting ashes weigh about three pounds. They are placed at the disposal of the friends.

There has always been an objection to cremation on the ground that the complete destruction of the body would seriously interfere with legal procedure in cases of poisoning. In the arguments which the author brings forth to combat this idea, one is very interesting in the light of medical jurisprudence. During the last twenty years the number of exhumations in Great Britain was 102. Of this number 25 were cases in which the manner of death was questionable. From this, therefore, it is seen that only five exhumations are made in a year. *Of these five only one has proved to be a case of poison.*

In order to facilitate the greater use of cremation, Sir Henry Thompson suggests that in every case of death the information of such death shall be obtained from a medical man; whenever necessary, autopsies shall be held; licenses must be obtained for the building

and use of any apparatus for burning human bodies ; crematories shall be under governmental inspection ; the medical authority, above referred to, shall give his permission for the use of cremation ; all violation of the law shall be punishable.

HYPNOTISM.

August Forel has written an article on the nature and uses of hypnotism, in which the condition of *hypnosis* is said to be a changed condition of the mind of an individual.

Hypnosis may be produced by suggestion ; by action on the nervous system of living or inanimate objects or a mysterious agent ; or by mental reaction.

The first is the "production of all the phenomena of hypnosis by the induction of the corresponding ideas, especially of conceptions of the imagination." It is the impression of one individuality upon another.

The best results are produced when the imagination is surprised.

By suggestion normal sleep can be converted into hypnosis. The reverse is also true.

Hypnotic consciousness is marked by hallucinations, emotional action, loss of logical association.

Hypnosis may be imperfect or somnolence ; a light sleep, in which the suggestion is strongly working ; or deep sleep.

By the power of suggestion the various functions of the body may be modified. There may be produced motor phenomena, sensory phenomena, emotional effects, vaso-motor effects, mental processes, changes in memory, and will.

The main action of suggestion is inhibitory : a dissociation of the associated. The mental force of the hypnotized is in a condition of weakness ; the mental forces of the hypnotizer are concentrated and strong ; the controlling power is in the feeling of subordination of the hypnotized ; "habits are auto-suggestions ; there are intimate psychological relationships of suggestive action with the automatism of dynamic associations, with the formation of habits, with the automatic unconscious cerebral activity in general."

Hypnotism may be used for pains, insomnia, functional paralyses, menstrual disturbances, constipation, alcoholism, *surgical anaesthesia for slight operations*, neurasthenia, nervous cough, and hysterical manifestations.

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

CONTAGION AT FUNERALS.

The public at large seem to require very startling results in order to become educated in sanitary matters.

The fact that contagion may be spread by corpses does not, even yet, seem to have taken possession of the public mind. Dr. Baker, of the Michigan State Board of Health, has issued a circular calling attention to a case of diphtheria in Lapeer County, Michigan, which originated from exposure in viewing the remains of a woman and child, brought from another county, and who had died from a throat disease, supposed to have been diphtheria. Many others, says Dr. Baker, would probably have been exposed except for the action of the local health officer, Dr. Wisner, who, suspecting the cause of the deaths to have been diphtheria, warned the neighbors and forbade the opening of the coffins at the funeral. He promptly isolated the first person attacked, and no epidemic followed. This, says Dr. Baker, is quite different from the result of a similar occurrence at Zanesville, Ohio, last spring, where many deaths resulted from exposure to a corpse brought from Chicago. It shows the importance of notice to the local health officer of the arrival of a corpse known to have died of a contagious disease, so that he may take every precaution that may be necessary.

EFFECT ON HEALTH OF DIGGING UP THE STREETS.

This subject has been studied experimentally by Dr. C. N. Dowd, of New York, the results being published in the *Medical Record*, June 21, 1890. The author estimated the number of bacteria in 1 c.c. of the soil taken from different localities. Sixteen of these samples were from places where the earth smelled strongly of illuminating gas, and an equal number where there was no odor of gas. The averages were nearly the same in the two classes of earths. He next studied the action of illuminating gas, dry and in solution, upon the bacteria of earth and upon the typhoid bacillus. The results were negative so far as could be determined. He concludes that the upturning of the streets may increase the spread of disease-germs, but the increase cannot be very dangerous. We do not expect that the digging of ditches will cause any epidemic. We do, however, believe that the upturning of the streets increases in a moderate degree the liability to disease, both by the spreading of bacteria and by otherwise producing bad sanitary surroundings.

CASE OF TUBERCULOSIS FROM INFECTED MILK.

Dr. Ernst gives the following case which, he thinks, demonstrates the communicability of bovine tuberculosis to the human subject by means of the milk. The case occurred in the practice of a veterinary surgeon in Providence, R. I.

Mrs. W., June 15, 1878, called the surgeon to see a sick cow. He diagnosed tuberculosis, and advised the destruction of the cow. This was not done, and on December 12th the cow was still alive and milking. The milk was used by the owner in her family. The cow finally died, May 30, 1879. Tuberculous deposits were found, at the autopsy, in the mediastinum, mesentery, spleen, kidneys, udder, intestines, pleura and tongue. In August, 1879, the baby that had fed upon the milk of this cow took sick, and died in seven weeks. The autopsy revealed tubercles all over the meninges, and a few in the lung. In 1881 another child, three years of age, died of tubercular bronchitis. In 1886 a third child, a boy of nine years, and who had been delicate for two or three years, sickened and died of "hasty consumption."

So far as known, the family on both sides have no record of tuberculosis, but, on the contrary, they belong to a long-lived family.—*Sanitary Inspector, April 1890.*

[While the above case is not conclusive evidence in support of the theory that tuberculosis may be acquired from milk, it is one that adds to the accumulating evidence. The author does not give us any information as to the other surroundings, as habits of the family which might have some influence in causing the development of tuberculosis. The writer has observed the death of five children in one family, of tubercular disease, before the age of six years, and where the family history on both sides was free from any known cases of consumption for at least two generations.

Nothing could be learned of the milk used, it being city milk. The children were nursed during the first few months. The occurrence of such cases as this weakens the evidence of the cases cited by Dr. Ernst. E. H. B.]

A NEW METHOD OF DISPOSING OF SEWAGE.

Dr. Joseph F. Edwards, editor of the *Annals of Hygiene* proposes, to dispose of sewage by what he calls a natural method.

The method consists essentially of a chamber in the cellar of the house into which the refuse of the water-closets, and other refuse, is deposited on a platform, with a circulation of air under it as well as above it. This foul air chamber is connected with a tall vent-stack or chimney leading above the house roof. This vent-stack by its upward draft, maintained by its proximity to the furnace chimney, or by a separate fire, draws the air from the foul air vault. This vault com-

municates with the rooms of the house by means of flues, and it is claimed that the draft of the chimney is sufficient to draw a constant stream of air from the heated rooms of the house down the foul air-flues, through the foul air chamber, over and under the refuse, so as to thoroughly dry it, when it may be removed and burned, or used as fertilizer. It is claimed that the current of air drawn over the refuse has a velocity of from fifteen to twenty miles an hour, or as rapid as a brisk wind. By the rapid drying of the contents of the vault all putrefaction is prevented, and all odors are swept out into the air above the house and mixed with the common atmosphere. He proposes to return to the dry closet system for privies, and allow only wash-water to run into the sewers, and by this means avoid the dangers of sewer-air entering the dwelling. This plan has been put in operation, and is said to do all that is claimed for it.

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital, Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

RESEARCH ON THE IRRITABILITY OF LEUCOCYTES.

Masset and Bordet (*Jour. de la Soc. R. des Scien. Méd. et Nat. de Bruxelles*, 1890). The tactile sensibility of leucocytes asserts itself, through their formation of pseudopodia, as soon as they come into contact with a resisting body. In a hanging drop of lymph the leucocytes resting on the glass put out numberless prolongations; so also do those on the surface of the lymph-drop, though not in as active a way. Those leucocytes in the centre of the drop preserve their spherical form. The tactile sensibility of the leucocyte explains also its passage through porous bodies, and its capacity to take up foreign bodies. The same movements are induced by chemical substances as the products of retrograde metamorphosis of the bacteria and those of disintegrated cells. Leucocytes move rapidly in those places where these substances have spread themselves.

A capillary tube is filled with a culture of *staphylococcus pyogen. alb.*, and one end, being first sealed, is then inserted into the abdominal cavity of a frog, and in a day or so removed. On examination it is found to contain leucocytes. The same is true of tubes filled with other bacteria, and liquids in which the bacteria were killed with heat. The result, however, is not the same when fluid resembling plasma

(but without bacteria) or products of retrograde metamorphosis are used. If one injects a frog with oxgall, the laden cells produce toxic substances. Capillary tubes filled with the peritoneal exudate of this frog, and inserted into the abdominal cavity of a second frog, contains, after twenty-four hours, many leucocytes; while tubes filled simply with lymph or oxgall give negative results.

All motion of leucocytes is stopped under the influence of chloroform vapor, to be regained on its withdrawal. A frog is anæsthetized in a bath of water with chloroform, or in a solution of 1 : 20 of paraldehyde. Tubes filled with culture-liquid and inserted into the abdomen of this frog contain no leucocytes. In inflammation, motion of leucocytes is induced through their contact with the vessel-wall. Wandering leucocytes struggle against destroyed tissue-areas by virtue of their chemical sensibility. By microbic damaging the bacteria draw the leucocytes in a manner in through the soluble substances which they have separated; when the lesion is not microbic, the chemical sensibility of the leucocytes is induced by the substances produced by the damaged tissue-cells. Immigration is suppressed by chloroform. After anæsthesia, dilatation of the mesenteric vessels obtains, and a purely mechanical peripheral arrangement of the leucocytes follows; but here the process ends: there is neither amœboid motion nor immigration. This irritability of the leucocytes explains many things. It throws light on the mechanism of reparation of wounds, and on the cell-infiltration of organs whose elements have been damaged (hepatitis, nephritis). It confirms the theory of phagocytosis, since it explains why the leucocytes collect around micro-organisms which have infected any given part of the organism, and how they in a way build defensive zones around the infected areas.

[The automatism of leucocytes has been long known, but the experiments and conclusions above cited are both ingenious and interesting, and open a wide field of thought. It has already been shown, in Metchinkoff's laboratory, that certain bacteria are taken up by leucocytes and carried by them into the tissues; and it is highly probable that some of the microbic diseases develop in the system in this way. On the other hand, it would seem probable, in the light of these investigations, that the chronic inflammations of syphilis, alcoholism, etc., are the result of the irritation produced by badly perfected end-products of retrograde metamorphosis, acting as "chemical" excitants, not only of the leucocytes, but also of the wandering connective-tissue corpuscles, and the nuclei of some cells.

One of the weakest points in the pathological sciences of to-day is the little knowledge we possess of the micro-chemistry of the tissues, both healthy and diseased. If we only knew more accurately the

nature of the normal "end-products" and their relation to tissue-elements, we could know more of pathological "end-products," and would find a very close relationship betwixt them and the erratic behavior of cells in chronic lesions.—V. C.]

AN UNUSUAL FORM OF CASTS IN URINE WITHOUT ALBUMEN.

Von Hoerslin (Münc. med. Wochenschr., No. 45) describes the presence in great numbers of dichotomously divided hyaline casts in a urine having a specific gravity of 1035, after an attack of renal colic.

Inasmuch as the urine contained no albumen, v. H. is of opinion that the casts must have been formed from a derivative of albumen.

Oppel (Anat. Anzeiger, v, No. 5) describes the following modified Golgi method for demonstrating the peculiar intra-lobular fibrous network in the liver, which surrounds the blood-vessels, and has been already found by others with other methods. An alcohol specimen of liver is immersed for twenty-four hours in a half per cent. aqueous solution of kali chromic. flav., and then washed in a very weak solution of ag. No. 3 (a few drops of a three-quarter per cent. solution in 30 c. cm. of aquæ destillat.) and then laid in a three-quarter per cent. solution of ag. No. 3. Already in one hour, and completely in twenty-four hours, the fibrous network is colored. The tissue is then laid in aq. destil. for a few hours, and then in alcohol.

Paraffin imbedding is not excluded. Pieces over one cm. in dimensions require a stronger (four per cent.) kali chrom. solution. The same results were obtained with lymphatic glands and spleen, and like results were obtained with other chrome salts.

A RARE FORM OF CARCINOMATOUS STRICTURE OF THE ILEUM.

Chiari (Prager med. Wochenschr., 1890, No. 3) reports a case, aged seventy-seven, with marked dilatation of stomach and greater part of small intestines, while remainder of intestines were much contracted. The cause lay in a ring-form stricture of the ileum, 20 cm. above the ileo-cæcal valve, and so small as to admit only a 0.6 cm. bougie.

The stricture was formed of a secondary carcinoma which had involved only the serosa and muscularis of the gut, and the primary growth lay in the gall-bladder.

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital; Assistant Surgeon, Brooklyn Throat Hospital; Instructor in Diseases of the Nose and Throat, New York Post-Graduate Medical School and Hospital.

PRIMARY LARYNGEAL PERICHONDritis.

David Newman, in Brit. Med. Jour., March, 1890, reports a case of this rare affection. The patient three weeks before admission had several rigors, and was conscious of slight pain in the throat; since

then had hoarseness, inspiratory dyspnœa and cough, with slight expectoration. No history of previous throat or lung affection.

On admission, breathing difficult, inspiration noisy and stridulous, expiration quick; respirations difficult, but amount of air ample. Voice very hoarse and high pitched; cough stridulous.

Laryngoscopic examination showed: marked œdematous swelling of mucous membrane of arytenoid cartilages and false cords, leaving only narrow chink between them. Left vocal cord fixed in median line; no view obtainable of right vocal cord, on account of fixation of right false cord. After several severe attacks of paroxysmal dyspnœa, patient died suddenly.

On removal of larynx at autopsy, the posterior surface of cricoid cartilage is seen to be distinctly eroded a little to left of posterior median line. Right cord nodular; immediately below it is an opening into an abscess cavity, extending down into trachea for distance of one-half inch. General œdema and congestion of laryngeal mucous membrane.

REMARKS.—1. Disease obscure and symptoms unusual.

2. No assignable cause for suppuration.

1. In perichondritis of cricoid cartilage there is generally pain on deglutition. Lymphatic glands in the neck frequently enlarge early in the disease. Swelling exists in front of larynx, and external palpation of cartilages, produces crepitation and causes pain; expectoration contains pus. In this case none of these symptoms present.

2. In most cases of perichondritis the disease can be traced to some definite cause. In necrosis the disease may be due to traumatism or imperfect nutrition. Since neither of these conditions existed in this case, the suppuration must have been spontaneous or due to septic infection. In absence of any specific disease to account for spontaneous formation of pus, the author concludes that the affected part must have received some slight injury that was not observed; this impaired its resisting power which rendered it susceptible to accidental septic influence.

ELECTROLYSIS IN LARYNGEAL PHTHISIS.

Mermod (*Jour. Resp. Dis.*, April, 1890). This operation requires complete anæsthesia. A two-per-cent. solution of cocaine should be used upon tongue, soft palate and pharynx. The larynx to be painted with one gramme of cocaine dissolved in one gramme of water. Besides cocaine 0.03 grammes should be injected into two points of laryngeal mucous membrane by means of Henyng's syringe. Very long, fine-pointed needles are then inserted into the diseased spots, these needles are connected with negative pole, the positive pole being placed on same side of neck, outside. The needles are retained in

this position for two to four minutes; and process repeated several times each sitting. The procedure is not accompanied by either pain or hæmorrhage.

During first fifteen days the local condition may be aggravated, the tissue being more infiltrated and swollen. This subsequently decreases, and steady healing ensues. This electrolytic method is especially adapted to early stages of laryngeal tuberculosis where infiltration is localized; and is superior to method of curetting larynx, which is long, painful, and difficult.

ACUTE ŒDEMA OF GLOTTIS FROM USE OF POTASSIUM IODIDE.

Dr. A. Groenouw (*Therap. Gaz.*, May, 1890) reports nine cases of this nature. The severity of the cases were not dependent on the size of the dose or length of time of administration—occurring in one case on the first day after administration of one three-grain dose. Where the action of the iodide of potash is localized in the larynx, other symptoms of iodism are absent. This peculiar action is attributed to the iodine of the compound, and not to the potassium. In none of these cases was there any local lesion that could predispose the larynx to œdema.

TRICHLORACETIC ACID IN AFFECTIONS OF NOSE AND THROAT.

(*Therap. Gaz.*, May, 1890) This drug is offered as a substitute for chromic acid. It occurs in colorless rhomboidal crystals, soluble in water and alcohol. It is recommended to be applied by means of a sound having a small cup-shaped extremity in which a number of crystals can be inserted. Before using it on the mucous membrane, a ten-per-cent. solution of cocaine should be employed. After application of this cauterant, a bright ivory-white scab is formed, which remains localized to that point. It differs from the slough resulting from chromic acid, in that it is uniformly thick, has no odor, and no inflammatory after-effects, in this respect being preferable even to the galvano-cautery. In one hundred and forty cases no hæmorrhage was produced, the scar disappearing in five or six days. So little pain results, that in pharynx and mouth it can be used without the aid of cocaine.

CONTRIBUTION TO HISTOLOGY OF VOCAL CORDS.

Kauthack-Michael (*Jour. Lar. and Rhinol.*, April, 1890). Glands are never found in true vocal cords, but are in sesamoid cartilages, in the angles of vocal bands, and the thyroid cartilage. In normal larynges, papillæ are never found in the region of squamous epithelium, but they are found frequently in chronic catarrhal conditions.

TUMORS OF GLANDS OF BUCCAL MUCOUS MEMBRANE.

Larrabie-Joal (*Jour. Lar. and Rhinol.*, April, 1890). These tumors occur on arches of palate or vault on the internal aspect of cheek or lips; may vary from size of bean to a hen's egg; they are rounded on

surface, and firm to the touch; are slow in growth, and have no tendency to ulceration. They have been considered as hypertrophies of salivary glands, and termed adenomata. They are composed of mixed epithelium. They may remain benign in character or may result in carcinomatous degeneration. They should therefore be removed as early and thoroughly as possible.

EARLY DIAGNOSIS OF MALIGNANT DISEASE OF THE LARYNX.

D. Bryson Delavan (Amer. Laryng. Asso.). Three early diagnostic points are of use:

1. Thickening of the mucous membrane with loss of motion in the same neighborhood, implies an infiltration of muscles. An apparent paralysis of one side of the larynx, associated with thickening, demands a cautious prognosis.

2. New growths of larynx, of papillomatous nature, encircled by ring of reddened, infiltrated membrane, are malignant; those not surrounded by zone of inflammation are benign.

3. The trans-illumination of larynx by electric light enables one to demonstrate the relative density of an enlargement of appreciable size, but as a means of recognizing the existence of a new growth of recent origin and small size, this method is of doubtful value.

OBSERVATION ON DEVELOPMENT OF TASTE ORGANS OF MAN.

T. Tuckerman (Jour. Anat. and Phys.). The upper surface of tongue of the fœtus of fourteenth week is marked by papillary elevations of the mucous membrane. The elevations vary greatly in size and shape, and the spaces between them are filled by epithelium. This epithelial covering has an average thickness of about 0.024 m.m., and is composed of three indistinct layers. The superficial layer consists of slightly flattened cells; the middle layer is much thicker and made up of nucleated spheroidal or polyhedral cells. The deep layer is formed of a single row of columnar cells. The mucosa is penetrated deeply at intervals by proliferations of epithelium which indicate the future positions of glands. The striped muscular fibres show their striæ but faintly.

The circumvallate and fungiform papillæ in various stages of development could be observed. A few taste-bulbs were detected in former variety, some penetrating the superficial layers of epithelium. The author thinks the taste-bulbs may be found in the embryo of ten weeks.

A CASE OF HYPERTROPHY OF ADENOID AT BASE OF TONGUE PRODUCING SERIOUS SYMPTOMS.

J. E. Boylan (Jour. Amer. Med. Assoc., July, 1890). Patient, an anæmic, nervous woman of forty years. Had cystic enlargement of

thyroid gland. About larynx, considerable pain, irritability, huskiness of voice and constant desire to swallow. Inspection disclosed rugged honeycombed tonsils, arytenoids slightly enlarged. The entire surface of tongue between the fauces was raised in a pale red tumor that completely overshadowed the epiglottis, its irregular surface consisting of small elevations or lobules, some as large as tip of little finger. This mass caused labored respiration, and at times severe dyspnœa. Applications of galvano-cautery caused much pain, but relieved the patient entirely of all distressing symptoms in larynx. Defective respiration was probably due to direct infringement of hypertrophied and inflamed tissue upon the region of chink of glottis.

COMPLICATIONS CONSECUTIVE TO ABLATION OF ADENOID GROWTHS.

M. Cartaz (*Jour. of Lar. and Rhinol.*, July, 1890). After removal of growths either by forceps or by scraping a hæmorrhage results, which may be abundant, but which generally stops soon after operation. Several cases of severe hæmorrhage are reported, four by Bryson Delevan, and two by author. This is not caused by tearing of an important vessel, but occur when the tumors have a fibrous consistency, the vessels retracting slowly. These are also encouraged by previous congestions, of throat, from any cause. The treatment recommended is irrigation with a very warm and astringent liquid. If this does not suffice it will be necessary to place a large plug in the nasopharynx.

OCULAR SYMPTOMS DUE TO DISEASES OF NASAL CAVITIES.

Hamilton-Wolfenden (*Jour. Lar. and Rhinol.*, June, 1890). 1. Empyema of anterior and unilateral hypertrophic rhinitis of left side, concentric contraction of the visual field for all colors, infraorbital neuralgia. The evacuation of the empyema and its cure was followed by cure of eye symptoms.

2. Ecchondrosis of the triangular cartilage and chronic rhinitis with asthenopia, pain in eyeball, injection of eyes when used for work, contraction of the visual fields. Eye symptoms disappear on removal of growth.

3. Spine of bony septum causing chorea magna, asthenopia, subjective color sensation, sneezing. Cured by removal of spine.

4. Post-nasal growths of 106 cases, eye symptoms co-existed in 51; in 22, catarrhal conjunctivitis; in 7, follicular conjunctivitis; in 16, granular conjunctivitis; in 6, blepharitis.

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

TRISMUS NASCENTIUM.

W. V. Williams, A. M., M. D. (The Journal of the American Medical Association, April 26, 1890). The writer claims that the alleged causes of tetanus in the new born are unsatisfactory. Wounds of the umbilical are not sufficient for all cords are ligated, and no nerves have been traced in the cord. In the same way pressure on the medulla occurs to a greater or less extent in all childbirths, and tetanus occurs infrequently. The doctor has the records of thirteen cases in his own and in his friends' practice, and in no case is there an assignable cause. Two of the cases were forceps deliveries; four were tedious; the others natural and all at full term. In six cases one or both parents were consumptive. In four, one or both parents were addicted to alcoholic excesses, and in three there were suspicions of syphilis. . . . "So obscure a disease, with so many factors of causation and with so little possibility of a satisfactory solution, must of necessity remain obscure. These possible causes are offered as suggestive more than as facts needing no further demonstration, and are designed to call especial attention to the possibility that others may determine the influence of predisposition to consumption and syphilis as being the most prolific causes. A predisposition determines *what* a disease may be; but an exciting cause determines *when* it shall be. A predisposition to consumption is inherited, depreciates the chances of long life and operates at birth as well as in advanced life; the same is true of syphilis and alcohol, and when the vital powers are so feeble as at birth, so much more will such influences disturb the functions of life. "The blood is the life," and any abnormal condition in that fluid from consumption, alcoholism or syphilis must be reflected upon the nerve centres and retard the activity of the brain, lessen nervous energy, and act idiopathically, thereby being the promoting cause of trismus.

GYNÆCOLOGY.

BY WALTER B. CHASE, M.D.

IMPROVED METHODS DIMINISH THE MORTALITY OF OVIOTOMY.

In an address before the Medical Society of London, April 14, 1890, on "The Present Position of Abdominal Surgery" (British Medical Journal, April 19, 1890), Mr. Meridith refers to the diminished mortality in operations for ovariectomy as compared with that of thirteen and fourteen years since.

The statistics of Sir Spencer Wells, 1876-77, of 150 cases there were 29 deaths, over 19 per cent., and 23 were due to septic peritonitis. One cause was a defective method in dealing with the pedicle, and imperfect understanding of the power of the peritonæum, as a medium for absorption. The risk was largely in the clamp, which for obvious reasons was long since abandoned.

Another improvement he attributes to Lister's teachings, which established indirectly, the necessity of surgical cleanliness, which with drainage and flushing of the abdominal cavity, had revolutionized the practice of abdominal surgery. The addition of antiseptics to water used in the peritoneal cavity was dangerous and without value, and using water previously boiled was not essential to success. If no decomposing material was left in the abdominal cavity, the peritonæum was capable of getting rid of a small amount of fluid remaining, and a few stray organisms thus deprived of the moisture needful for their development, were probably absorbed and excreted.

He looked with disfavor upon the administration of opium, as it restrained both absorption and excretion; and the value of the administration of saline cathartics in the early stage of peritonitis was due to their promoting absorption and excretion. As a result of improved methods in 1888-89, he quotes the records of the Samaritan Hospital, in which 130 ovariectomies with only 6 deaths, a percentage of 4.3.

During the discussion on this paper, Mr. Mayo Robsen (Leeds) gave the results of his ovariectomies, numbering 69, with 2 deaths, both of which were apparently very unfavorable cases.

CODEIA IN PELVIC PAIN.

Freund, in "Medical Chronicle," May, 1890, confirms Lauder Brunton's recommendation as to value of codeia in disease of women. In pains which proceed from the uterus it gives relief, and in ovarian troubles it is of great value, while in exudations of pelvic peritonæum and connective tissues and affections of tubes, it is inert.

He gives half a grain three times a day, which promptly relieves ovarian pain, whether functional or inflammatory. He claims its action is local, and does not impair the appetite, stupefy, or constipate.

MENSTRUATION AND REMOVAL OF BOTH OVARIES.

Englemann (Annals of Gynæcology and Pædiatry, April, 1890). His conclusions and deductions are as follows:

"From the history and microscopical examination in my own cases and in that of Prof. Schatz, we may safely draw the following *physiological conclusions*, which are corroborated by numerous cases of oöphorectomy and of double ovariectomy, now observed, the histories of which have been recorded for a sufficient length of time after recovery from the operation:

“1. That the continuance of *menstruation* after removal of both ovaries is due to remnants of ovarian stroma left *in situ*.

“2. That particles of ovarian tissue, however small, which remain after the removal of the greater portion of the organ, whether or not the Fallopian tube be preserved, *may* retain their activity and continue the functions of the entire organ, and from this we infer that menstruation is more or less intimately associated with ovulation, and that the menstrual condition indicates the ovarian status, provided the uterine tissues be normal in character.

“3. That even elongated pedicles may contain ovarian stroma in which the functional activity of the organ may be continued.

“4. That remnants of ovarian stroma do *not necessarily* preserve their vitality and functional activity.

“5. That the ovary is an essential factor in the functional life of woman, and that menstruation is inseparable from ovarian activity, if not ovulation.

“The deductions of practical value to the operator are as follows:

“1st. If menstruation is to be checked and the change of life produced, it is requisite that every particle of ovarian stroma shall be removed, if the result desired is to be expected with certainty.

“2d. If shrinkage of fibroids, limitation of hæmorrhage, or cessation of annoying symptoms is to be accomplished with the greatest possible certainty, both ovaries must be *completely* removed.

“3d. In the performance of double ovariectomy in women not yet beyond the climacteric, and not suffering from uterine reflexes, such healthy ovarian tissue as may exist should be spared in order that functional activity may not be impaired.”

THE SHARP CURETTE.

In a clinical lecture (Sims, *Annals Gynæcology and Pædiatry*, April, 1890) he incidently refers to the sharp curette and his preference for it. He says:

“I wish, in this connection, to emphatically state my preference for the Sims, or sharp curette, as compared with the Thomas, or dull curette. I have used both of these instruments, and it has been my experience that I can certainly remove more effectually and more thoroughly any growth or fungoid degeneration of the utricular glands with the sharp curette, and I have seen the dull curette fail completely to give relief in a number of cases. I have even had cases like the one now before you, in which the operation had to be done finally with the sharp curette in order to remove all the pathological conditions that existed within the uterus.

“It has been stated by many operators that the sharp curette is a dangerous instrument. That I do not believe, for I have used the

instrument now continually for nearly twenty years, and I have yet to see the first case of accident follow its use. Like any sharp instrument, it is a valuable one in the hands of those who understand its use, and, probably for the same reason, it may be called a dangerous instrument in reckless hands.

“In using the sharp curette, you will always find that when you are curetting over a diseased area, the instrument will emit no sound whatever; it will, in fact, be perfectly noiseless; but as soon as your instrument has touched healthy tissue you will get that peculiar rasping sound similar to the sound produced if the curette be drawn over the palm of the hand.”

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

“SHOULD DOCTORS WHO HAVE BECOME SYPHILITIC CONTINUE THEIR MEDICAL DUTIES?”

Or, as Neisser's title in the original stands: “Dürfen syphilitisch infizierte Ärzte ihre ärztliche Thätigkeit fortsetzen.” A. Neisser, Breslau (Centralblatt. f. Chirurgie, 1889, No. 39).

This instructive, or at any rate interesting, treatise on this subject had for its origin a reply to a direct question on the subject by a medical colleague.

In this answer he lays stress on the following points: 1st. On the stage of the disease. 2d. As to whether it has been treated thoroughly up to the time. 3d. As to whether the hands of the actively-operating medical man are free from efflorescences. 4th. If any other, though perhaps non-syphilitic skin affection is present.

Points one and two do not deserve any lengthy mention. It stands to reason that the older the date of infection and the more pronounced and continuous the specific treatment, the slimmer the chances of conveying contagion to another; but even in cases of relatively recent, etc., small ulcers, and papula, Neisser thinks there is no real reason why danger should exist with care on the part of the medical man, the surfaces being protected as they should be with rubber cots, or impermeable and solid dressings. In regard to point No. 4, he thinks the danger here also infinitesimal with any degree of care; the eruptions

themselves cannot be dangerous, the only chance being from hæmorrhages from their surfaces conveyed to raw surfaces on the patient. He thinks this possibility of infection still a moot or open question.

He finally and in conclusion leaves the question pretty open, by saying that in every case the propriety of the operation, by surgeon or accoucheur attending right along to their proper and continuous duties, should be judged by its own merits, and no Draconian law at least can be instituted.

ON KELOIDS: THEIR SYMPTOMATOLOGY AND PATHOLOGICAL ANATOMY, BY H. LELOIR, OF LILLE, AND E. VIDAL, PARIS. TREATMENT OF KELOID AND HYPERTROPHIC SCAR, BY E. VIDAL.

(Annales de Derm. et de Syphilographie, March 25, 1890, p. 193.) The author gives first the history of the name in the usual style, and the original credit of the nomenclature, beyond all doubt, to Alibert, 1817. They insist that it should be spelled *cheloid*, instead of as above; also giving credit to Alibert for his distinction of the idiopathic or true keloid, from the false or hypertrophic cicatricial tissue so resembling it. The authors make the following suggestions in the study of this affection, or, more properly, these affections, as helping to show their non-identity.

- (1) Spontaneous, or idiopathic, true keloid.
- (2) True keloid, but still springing from and not exceeding limit of cicatrix, or
- (3) *Simple hypertrophic scar.*

Vidal says that the true spontaneous keloid can always be differentially diagnosticated from cicatricial hypertrophy by the fact of its having more or less of the glandular elements, as, for instance, the sweat or sebaceous ducts manifest on the surface, or at any rate demonstrable by the microscope, there may be also some downy hairs. Kaposi appears to agree with him in this; he at any rate quotes that author in his support; and Dr. L. also adds that it can be often witnessed on a keloidal tumor that there is a slight moisture when the rest of the body is perspiring; thus showing that the perspiratory function still has some action. This, he states, can be more readily proved by the administration of pilocarpine.

Another and distinguishing diagnostic proof of idiopathic keloid as contradistinguished from hypertrophic scar is the fact that it, the true keloid, never goes below the true skin-tissue, and is always movable over the subjacent tissues.

A true keloid, to tactile sense, should give more the impression of a tendon than a cartilage.

It may be insensitive, but is usually sensitive, or quite painful. The tumors of true keloid are not likely to extend over so large an area as the secondary keloid occurring in scar-tissue; they are not usually so numerous either.

Spontaneous resolution, or absorption of primitive keloids, has been observed, but that rarely; among others by Alibert twice, by F. Hebra, Sedgwick, Neumann, Hutchinson, and De Amicis, each, once.

They are inclined to occur in neurotic people, a fact which has some bearing on the disease, as perhaps being a tropho-neurosis.

Among other anatomico-pathological facts, he states that when a vertical section is made of a true keloid, the fibrous tissue will all be found to run parallel with the long axis of the tumor. The epiderm and its interpapillary prolongations are normal in the true keloid, therein differing from the cicatricial and hypertrophic form.

Giant cells may be found, but only in young keloids. In recent keloids, he says, that often round cells may be found around the broken-down vestiges of the hair and sebaceous follicles and glands, which goes to show that even what we term spontaneous keloid may after all have for its point of departure an acne, and perhaps should be considered secondary, as some (MOST AMERICAN) dermatologists believe.

There is certainly, he says, no microbe present.

Treatment.—The author's (Dr. Vidal) treatment for this affection, whether of primitive or secondary keloid, or hypertrophic scar, is identical. He makes mention of the various medicaments, both internal and external, that have been employed, and is, as every one is, convinced of their inutility; believes, however, he has seen good results follow emplastrum vigo, applied on cloth, and that continually. He also condemns, as do all other authorities, all radical surgical operative treatment, as of excision, and has no good word for actual or potential caustics; mentions, however, two reported cases—one of Warren, Boston, 1837; another of "Michon," Paris, 1848—where the operators claim by removing the tumor with a very large border of normal skin they had effected cure; he says this is not to be recommended, as the deformity, etc., would be great.

To be brief, the treatment Dr. V. recommends is scarification repeated and deep, not carried beyond the limits of tumor itself; these scarifications may be at right angles to each other (cross-hatching), or lozenged. He believes he has seen great relief to the subjective symptoms, pain, etc., afforded by this method; and says he believes by cutting the network of nerve-tissue in this manner relief is absolute after the third operation.

These scarifications must be made frequently and for a long time, and continued, in short, till the resulting scar is thin and supple. The squares made by the cross-hatches should be about two millimetres. He uses local anæsthesia, preferring for this the liquid chloride of methyl, putting it on with a camel's-hair brush, until the surface is pale, letting it regain its former color nearly, then reapplying again; repeats this two or three times in the belief that the anæsthetic produces greater and deeper effect in this way; then goes on with his scarification—absorbent cotton dressing, with boric acid solution at first, then Vigo's emplastrum, applied night and morning after the first day; he is convinced that the mercurial application does good in this way.

M. Le Dentu, of the Hôpital Saint Louis, thinks he can improve this method by first ablating the tumor, causing primary union of the wound and practising the scarifications thereafter of the cicatrix if necessary.

He refers to Dr. Hardaway's recourse to electrolysis for the removal of these neoplasms, as also to Dr. Brocq's writings on the subject, etc.

(There is a fashion in all things, and multiple scarification is getting to be the fashion. S.S.)

BACTERIOLOGY.

BY B. MEADE BOLTON, M.D.,

Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn.

PROTECTIVE INOCULATIONS.

(Continued from page 560.)

Admitting, however, that protective inoculations are of value, not only in hydrophobia, but in the other diseases mentioned above, their scope must of necessity be limited. There are a number of communicable diseases which are not followed by immunity, some of which even render the patient more liable to subsequent attacks. Inoculations in such diseases would be of course worse than useless. To this class of diseases belong tuberculosis, pneumonia, malaria, cholera infantum, dysentery, diseases produced by infection of wounds, etc.

In regard to the explanation of the reason why recovery from an attack of an infectious disease affords immunity, there are at least three distinct theories. Pasteur and Klebs incline to the view that by an attack of a given disease some substance necessary to the growth of the micro-organism of the disease in question is used up. Any subse-

quent infection would then become harmless: for the micro-organism would not find this necessary substance in the body of the animal, and so could not grow. This theory is not very plausible, for experience has not shown, on the one hand, that micro-organisms are so sensitive, as this view would demand, to the absence of minimal amounts of any one kind of nutrient material; on the other hand, it is not probable that the animal body would remain free, for months and years, of a substance normally present.

The theory held by Chauveau, Wernich, and others is that the micro-organisms produce some chemical substance in the body of the affected animal which prevents further growth, when present in sufficient amount. This substance is supposed to remain in the body of the animal after recovery and prevent the micro-organism from growing in case of any subsequent infection. It is not probable that this can be the explanation, for Sirotinin has shown that the disinfectant property of the waste-products of bacterial growth is not as powerful a disinfectant as is often supposed. Again, it does not seem plausible that a waste product would be retained for such a length of time in the animal body: it would probably be rapidly eliminated.

Grawitz explains the immunity acquired by recovery from an attack of an infectious disease by attributing an increased vital energy to the animal-cells. His idea is that the cells acquire increased power of assimilation. In the conflict between animal-cells and bacteria the former come out stronger by reason of the exercise. This increased power is supposed to be inherited from cell to cell. It is certainly true, as stated above, that bacteria which have been passed through susceptible animals often become more virulent. A culture of anthrax bacilli which has been so attenuated that it will not kill guinea-pigs, but is virulent for mice, if put through a mouse becomes virulent for guinea-pigs (see also above, Pasteur's experiments with hydrophobia in rabbits). If this is the case with bacteria, it would seem at least plausible for the animal-cells.

Finally, Buchner's theory, and the similar theory of Wolfberg, is supported by Flügge. This theory attributes to the special organ which has been the seat of the disease a reactive change. It is more or less a specialization of Grawitz's theory. Wolfberg emphasizes his view in case of small-pox, in which disease he contends that the diseased process must run its course in the skin, in order to give immunity, and thinks it very likely that by one attack all of the less resistant cells of rete Malpighii are destroyed and that the resisting power of the more resistant cells is increased, and also that the propor-

tion of the more resistant to the less resistant cells is increased. This would be equivalent to a survival of the fittest, and seems, on the whole, most satisfactory.

PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.,

Associate Director of the Department of Physiology and Experimental Therapeutics,
Hoagland Laboratory, Brooklyn.

THE EFFECT OF CUTTING THE VAGI-NERVES BELOW THE DIAPHRAGM.

Arthaud and Butte (*Recherches sur les effets produits par la section des vagues au-dessous du diaphragme, Comptes Rendus de la Société de Biologie*, 1889, p. 581). Section of both vagi in the neck has long been known to lead to death, most frequently from pulmonary troubles, sometimes also coupled with fatty degeneration of the heart. Physiologists have generally accepted the classical experiments of Claude Bernard, that cutting the vagi so low as not to involve the cardiac branches will not cause the death of the animal.

Arthaud and Butte have lately been engaged in some very interesting studies of the abdominal viscera, especially the liver, and have made some valuable observations on the functions of the vagus with regard to these organs. Their method was to cut and resect all the branches of the vagus opposite the cardia; and they have succeeded in keeping their animals (dogs) alive for from eight days to three months after the operation. The prominent symptoms were anorexia, vomiting, some cutaneous lesions, slight albuminuria, and a progressive inanition, which is extreme when the animal dies. The liver was *completely devoid* of glycogen or glucose, and this was true of the animals which died in eight days as well as in those which lived longer.

The liver, kidney, and stomach all appeared to the naked eye congested, and, in one case (a dog, which died in eight days), there were ulcerations of the gastric mucous membrane. A histological examination showed a commencing sclerosis of the mucosa of the stomach, a perivascular hyperplasia of connective tissue in the kidney, and an arterial congestion with intra-lobular lacunæ (lacunes intra-hépatiques). The amount of glucose in the blood steadily decreased, and, a few days before death, only traces could be detected. The glycogenic function of the liver appeared to be entirely destroyed.

The authors are unable to explain the contrary results obtained by

earlier observers, unless it be that they did not cut *all* the branches of the vagus, or that possibly there was a regeneration of the fibres. To avoid the latter source of error, they practised resection, and obtained uniform results.

SUGGESTIONS AS TO THE MERITS OF SEVERAL IODINE COMPOUNDS AS
SURGICAL DRESSINGS.

In his "Inaugural Dissertation," Berlin, 1888, (Ueber die Wirkung des Kalomel bei gleichzeitiger Anwendung substituierender Iodpräparate), on the action of calomel with the simultaneous administration of iodine compounds, M. Cohn has referred to the well-known fact that calomel, when put into the eye of a patient who had been taking iodine internally, a violent inflammation often results, owing to the excretion of iodine in the tears.

At the suggestion of Liebreich, Dr. Cohn undertook a study with a series of iodine compounds, and found that, after giving iodoform, iodol, and ethyl-iodide internally, calomel, blown upon the cornea, always produced a considerable inflammation, and iodine was found in the lachrymal secretion. On the other hand, he found three iodine compounds, after the administration of which there was no inflammation following the insufflation of calomel upon the conjunctiva and no iodine was found in the tears. These were iodaseptol, sodium sozoiodol, and iodo-thymol-sulphate of soda. These substances are all good as surgical dressings, and C. suggests their use instead of iodoform, iodol, and other compounds which are likely to produce iodism. —*Reviewed from "Revue des Sciences Médicales,"* 1890, vol. xxxv., p. 487.

[After the continued use of mercurials, caution has to be used in giving iodides, especially potassium-iodide, as they stir up the mercury accumulated in the system and cause its elimination, sometimes producing severe ptyalism with ulcerative stomatitis and all symptoms of mercurial poisoning. If iodaseptol, sozoiodol, and iodo-thymol sulphate of soda do not cause elimination of iodine in the tears, it is probable that they do not cause its elimination through the saliva, and this may influence the elimination through the saliva of any soluble compound of mercury which they may form. The fact that they do not create inflammation in the eye with calomel may be due to the fact that they do not form any soluble compound with mercury at all. If their internal use is unattended with danger, and if they act in general as other iodides, they would be of great value in cases where the system was to be impressed with iodine, after the previous continued use of mercury. Careful experiments on animals or clinical observations on

this subject would be very interesting and valuable. These remarks are made to show the possible advantages of these drugs, with the hope of obtaining further information on the subject, not to advise their indiscriminate use as free from danger, until other work, corroborative of the present, has been accepted.—K.]

CORRESPONDENCE.

445 Fourth Avenue, Brooklyn, August 7, 1890.

Editors Brooklyn Medical Journal :

In Dr. Pilcher's paper upon the Public Hospitals of Brooklyn he credits the Norwegian Hospital, situated at the corner of Forty-sixth Street and Fourth Avenue, with only ten beds; whereas this building can easily accommodate thirty-five patients. In the old building we could not accommodate more than ten; but the new hospital was built for thirty, and can contain thirty-five without crowding.

Yours truly,

JAMES McMANUS, M.D.,
Associate Attending Physician.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The Eighteenth Annual Meeting of this Association will be held at Charleston, S. C., December 16 to 19. The following topics have been selected for consideration:

1. Sanitary Construction in House Architecture. (a) Heating. (b) Lighting. (c) Drainage. (d) Ventilation.
2. Sewage Disposal.
3. Maritime Sanitation at Ports of Arrival.
4. The Prevention and Restriction of Tuberculosis.
5. Isolation Hospitals for Infectious and Contagious Diseases.
6. Establishments in Favorable Climates for Persons having Tuberculous Predispositions. (a) Schools for Children and Adolescents. (b) Sanatoria. (c) Permanent Residence.

Papers on Miscellaneous Sanitary and Hygienic Subjects.

MISCELLANEOUS.

DECISIONS OF SUPREME COURT AND COURT OF APPEALS IN CASE OF CRUIKSHANK *vs.* GORDEN.

Supreme Court.

WM. J. CRUIKSHANK

vs.

WM. GORDEN.

Opinion at General Term.

BARNARD, P. J. — The plaintiff is a physician. The complaint alleges various causes of action based upon spoken words charging the plaintiff with ignorance and unskillfulness in his profession. The complaint avers that the slanders were uttered with malice towards the plaintiff, and with the intent to injure him in his profession as a physician. The proof bears out the complaint fully. The utterances were numerous and to different persons, and were to the effect that plaintiff was no doctor; that his treatment would kill the patient, and that persons employing him would murder their own families thereby. The point taken, that these words are not actionable *per se* is not, we deem, well taken. A charge made maliciously in respect to a vocation or trade of a person, which if they would render him unworthy of employment, are actionable *per se*. Kinney vs. Nash, 3 Comstock Rep., 177.

Numerous exceptions were taken on the trial to the admission of evidence showing a repetition of language of the same general import as that counted upon in his complaint. The evidence was proper. The repetition of the charge may be shown and the circulation and publicity of these utterances, to establish or express malice, and to prove the extent of the injury. Derlin vs. Rose, 69 N. Y., 122.

A witness for the plaintiff testifies to one of the slanderous utterances and in a conversation with the defendant, after the papers in the within action were served, in respect to the action, testifies that defendant offered him \$1,000.00 to go to Canada to avoid testifying on the trial. The real point of the evidence of the witness was an intent to induce the witness by defendant to "not remember." The offer was so woven in the narrative that it could not be detached even if it was improper evidence, of itself. It is difficult to conceive of a case where an offer to suppress a witness is inadmissible. It was a virtual admission of the speaking of the slanderous words. The charge in respect to the right of the jury to take

into consideration the justification or mitigation set up in the answer, if it appeared from the evidence to have been set up wantonly and without cause is justified in *Dash vs. Rose*, 69 N. Y., 123. The damages are not excessive. The charges are directed at the plaintiff's profession, are so numerous and personal as to indicate great malice, if the words were untrue. No proof is given to show their truth and the case seems to show a malicious speaking of false words addressed to the plaintiff's competency as a physician, for the sole purpose of destroying his means of livelihood.

The judgment should therefore be affirmed with costs.

COURT OF APPEALS, SECOND DIVISION.

WILLIAM J. CRUIKSHANK,
Respondent,
vs.

WILLIAM GORDEN,
Appellant.

JANUARY 14, 1890.

(Appeal from a judgment of the General Term of the Second Judicial Department, which affirmed a judgment entered on a verdict.)

Since 1880 the plaintiff has been a practicing physician, and in November, 1883, he treated a servant employed in the family of the defendant, and afterwards treated his wife and children; and November 19, 1884, he was called to attend defendant's child, but his treatment being unsatisfactory, he was, at defendant's instance, superseded on the 25th of November by Doctor John Griffin. On the 13th of April, 1885, the defendant paid the plaintiff for his services. In August, 1886, this action was brought to recover damages for words alleged to have been spoken by the defendant on six different occasions in respect to the plaintiff's competency to practice as a physician. No special damages were alleged in the complaint or proved on the trial.

A witness testified that defendant said: "That Dr. Cruikshank had treated his child for malaria when she hadn't the malaria at all; that he never should pay him a cent; and wound up by saying if he hadn't employed another doctor, Dr. Cruikshank would have killed his daughter." (Fol. 77.) These words are alleged as the first cause of action.

Another witness who had a sick child then being treated by the plaintiff, testified that defendant said to him: "I had no right to take Dr. Cruikshank, he would not under any consideration take Dr.

Cruikshank for a case; that he was no good; he was only a butcher; so I asked him why. He said his child was sick and he almost killed her, if he didn't call another doctor in; and he told me if I didn't get another doctor right away he would kill my child; that I would be the murderer of my child. He asked me: 'What sickness is it?' I told him he had diphtheria. He said: 'Oh, that is nothing at all; he would just as well take a case of diphtheria as he would drive nails in wood.' That he was no good; that wherever he went he would tell that he was no good. He asked me if I syringed the child's throat. I said no. He said every doctor gives a prescription, and if the child has diphtheria he gives a syringe; that Dr. Cruikshank was only practicing on my child; that he was killing my child." (Fol. 50.) These words are alleged as the plaintiff's second cause of action.

The husband of the witness last referred to testified that defendant said to him: "I should take another doctor; he would not have him for a dog; he wouldn't have him doctor a dog. He says: 'If I were you I would go for another doctor right off, because he is nothing but a butcher, and I shall do all the harm for him, because he doctored a child of mine, and if I hadn't got another doctor in he would have killed her.'" (Fol. 63.) These words are alleged as the third cause of action.

A brother of the last witness testified that defendant said so him: "Well, I told Mrs. Snyder to get another doctor, if she don't she will be the murderer of her own child; he doctored in my own family, and if I hadn't got another doctor my child would have died." (Fol. 73.) These words are alleged as the fourth cause of action.

Another witness testified that defendant said: "He (plaintiff) did attend in my family, but I had him for Mattie, and he nearly killed her; if I hadn't let him go he would have killed her; I wouldn't have him to a dog; he is no good." (Fol. 40.) These words are alleged as the fifth cause of action.

A witness testified that the defendant said to him: "I had better tell Mrs. Chapin if she wants to get better she had better get another doctor; that he would not have him attend a dog; that he had him attend his child; and if he had not got another doctor his child would not have lived. I afterwards went to Mrs. Chapin and told her." (Fol. 84.) These words are alleged as the sixth cause of action.

WM. ROSEBAULT, for *Plif.-Respt.*

WM. J. GAYNOR, for *Def't.-App'll.*

FOLLETT, *Ch. J.*

Many of the statements testified to by the witnesses, and which the jury must have found were made by the defendant, imputed not a lack

of skill in a particular case, but general ignorance of medical science, incompetency to treat diseases and a general want of professional skill. Such statements made in respect to a practicing physician are slanderous and actionable without proof of special damages. (*Secor v. Harris*, 18 Barb., 425; *Fitzgerald v. Redfield*, 51 Id., 484; *Bergold v. Puchta*, 2 T. & C., 532; *Lynde v. Johnson*, 39 Hun., 12; *South See v. Denny*, 1 Exch., 196; *Towns L. & S.* (3 ed.), Sec. 193; *Folk. Stark*, Sec. 88; 15 Am. L. Rev., 573; 19 Am. L. Reg. N. S., 465.) The point is made that defendant's statements all referred to the plaintiff's treatment of defendant's child, or that, at least, it was a question of fact for the jury to determine whether they were not made solely with reference to that particular case. Much of the language proved to have been spoken did not refer to the treatment of the child, but related to the plaintiff's general competency and fitness to practice as a physician, and so it is quite unnecessary to consider whether statements disparaging the treatment of a particular case are, or are not actionable without proof that special damages were caused by the words spoken.

The defendant denied in his answer the speaking of the words charged in the complaint, and alleged in mitigation that he described to three persons the plaintiff's unskilful treatment of his child, but that the words were not spoken maliciously, and further alleged: "In further mitigation of damages, defendant says that plaintiff is not sufficiently nor ordinarily skilful nor competent as a physician, and has no reputation as a competent physician, and never had." The defendant neither gave nor offered any evidence in support of this allegation. In response to a request to instruct the jury that they might consider this allegation and the defendant's failure to attempt to prove it, upon the question of damages, the Court read the allegation, and said: "If you believe the imputation in the answer upon the plaintiff's professional competency is unproved, and was inserted maliciously and without probable cause, you may consider such imputation in aggravation of damages. They had a right to plead that issue. If they fail on it and it was inserted in good faith, that would not tend to enhance the damages. But it remains on record, and if you find that it was put in wantonly and without cause, then you may consider that an aggravation of damages." To this instruction the defendant excepted, and now insists that it was erroneous, citing, in support of his contention, *Klinck v. Colby*, 46 N. Y., 427. In that case it was held that a plea of justification, and the failure of the defendant to attempt to sustain it, was insufficient evidence to warrant a finding that a *prima facie* privileged communication was composed and published maliciously; and it was further held that: "In an action for libel, where, under an answer proper to that end, the defendant has shown that the communi-

cation was privileged, his further answer of justification by the truth of the charge: though without proof given to sustain it, may not be taken into consideration of evidence of malice and in aggravation of the damages." In reaching these conclusions, the learned judge made some observations which have led to the understanding that the Court intended to lay down a general rule that no unsustained plea of justification could, under any circumstances, be considered by a jury in determining the amount of damages which a plaintiff might recover in an action for defamation of character. But that it was not the intention of the Court, or of the learned writer of its judgment, to lay down a rule so broad as has been claimed is made apparent, we think, by reference to the judgment, rendered six years later, in *Distin v. Rose*, 69 N. Y., 122. In that case, an action for slander, the defendant charged the plaintiff with being a prostitute, and, among other defences, justified the charge in his answer; but on the trial he failed to sustain his plea of justification, though he gave evidence tending to show that the plaintiff lived with a man as his wife with knowledge that he had a wife living. The Court was requested to charge: "There was nothing in the defendant's answer to enhance the plaintiff's damages." To which the Court answered: "That is for the jury to say." An exception was taken, the validity of which was considered by the Court. In considering this exception, the Court said: "The words proved to have been spoken imputed unchastity by the most offensive epithets. The answer alleged in express terms that the charge was true, and then specified facts that she had lived with a man as his wife, knowing that he had at the time another wife living. If there was an entire failure of proof to sustain the charge, and the jury believed that it was inserted in the answer wantonly or maliciously, and without probable cause for believing it true, they might consider it upon the question of damages, and it was right, therefore, to decline, as matter of law, to charge that they could not so consider it. There was no intimation in this refusal that in this case they ought to so consider it, and the charge, on the contrary, intimated that the facts proved ought to be considered in mitigation of damages." Five of the judges who sat in *Klinck v. Colby*, including the writer of the opinion, sat in the case last cited, and we cannot assume that the judgment in the first case was unknown to the Court, or that it was regarded as in conflict with its decision in the latter case. The same rule was laid down in *Bennett v. Matthews* (64 Barb., 410), and its existence was not denied in *Doe v. Roe* (32 Hun., 628), but it was held inapplicable to that case because the evidence tended strongly to show that the defendant did not interpose the justification maliciously, but in good faith. Before the Code the rule was vigorously stated and applied in *Fero v. Ruscoe* (4 N. Y., 165).

It has been uniformly held, before and since the Codes, that when a defendant pleads, in justification of the breach of his promise to marry, that the plaintiff has become unchaste, and on the trial makes no attempt to prove his plea, the fact may be considered by the jury in assessing the damages. (*Southard v. Rexford*, 6 Cow., 255; *Kniffen v. McConnell*, 30 N. Y., 285; *Thorn v. Knapp*, 42 Id., 474.)

None of the cases cited are decisive of the question under consideration, for, as is urged by the learned counsel for the appellant, the allegation quoted from the answer falls short of a justification, and is at most but a plea in mitigation. It is urged that pleas in mitigation, being authorized by the Code, cannot be considered on the question of damages. The interposition of pleas in justification is authorized by law; nevertheless, as we think we have shown, courts have quite uniformly held that, if they were interposed in bad faith, the jury might consider the fact on the question of damages. The authorization, by the Code, of pleas in mitigation is not a license for their interposition in bad faith, and for the purpose of injuring the reputation of the plaintiff, and, when they are interposed for that purpose, the fact may be considered by the jury.

Two physicians, who were sworn in respect to other questions, were permitted to testify that the plaintiff was reputed to be a competent and skilful physician. This was objected to by the defendant; but no ground having been stated, the exception is not available.

No error was committed in permitting the plaintiff to show that, between the date when the cause of action arose and the date when the action was begun, the defendant repeated the charges on occasions other than those set forth in the complaint. Nor was there any error committed in permitting the plaintiff to show that defendant had attempted to hire one of his witnesses to leave the country.

The judgment should be affirmed, with costs.

"All concur. BRADLEY and HAIGHT, J. J., in result."

A copy.

H. E. SICKELS, *Reporter* (per C.).

MEDIASTINAL DISEASE.

Dr. E. S. McKee, of Cincinnati, selects from the recent medical literature on the above subject the following:

Hare,¹ in his Fothergillian Prize Essay, enters into this subject very thoroughly. He gives the records of 134 cases of mediastinal

¹ Hare, Fothergillian Essay, 1888. P. Blakiston & Co., Philadelphia.

cancer, 98 of mediastinal sarcoma, 115 cases of mediastinal abscess, 16 cases of non-suppurative inflammation, 21 cases of lymphoma of the mediastinum, 7 cases of fibroma of the mediastinum, 6 cases of hæmatoma, 11 dermoid cysts, 8 hydatid cysts, 104 cases of various mediastinal diseases. The author makes a brief summary of his conclusions, as follows :

1. Cancer is more frequently found in the mediastinal spaces than any other morbid process.
2. Abscess is the morbid process next in frequency of occurrence.
3. Sarcoma occupies the third position as to frequency of occurrence.
4. Lymphomata and lymphadenomata occupy a fourth place, but are much more rare than the others mentioned.
5. The anterior mediastinum is affected far more frequently than the other two spaces.
6. Most mediastinal growths occur in adults.
7. More males are affected by forms of mediastinal disease than females.
8. Cancer and sarcoma of this space are necessarily fatal.
9. About forty per cent. of the cases of abscess recover.

Edwards² reports a case of carcinoma of the mediastinum in a child, and reviews 67 cases of mediastinal disease previously recorded. He finds mediastinal disease in children varies from that in adults, in that sarcoma is the most frequent morbid process, carcinoma next, and abscess third in order.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

This association will meet in its seventeenth annual session at Louisville, Ky., October 8, 9, 10, 1890. Titles of papers should be sent to the Secretary, Dr. E. S. McKee, 57 West Seventh Street, Cincinnati, as soon as possible. The American Rhinological Association will hold its annual meeting at the same city the same week, viz., October 6, 7, 8, 1890. The Secretary, Dr. R. S. Knode, National Bank Building, Omaha, Neb., will receive the titles of papers to be read. These two associations meeting so near together will make a double attraction. Louisville will do her very best to make the members have a grand good time. Papers are earnestly solicited for both organizations; and those who cannot read papers are invited to come and bring their wives and daughters with them, as the ladies will find it especially enjoyable.

² Edwards, Archives of Pediatrics, July, 1889.

THE

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ORIGINAL ARTICLES.

THE TREATMENT OF DYSENTERY.

BY H. A. FAIRBAIRN, M.D.,
Attending Physician to St. John's Hospital.

Read before the Medical Society of the County of Kings, April 15, 1890.

I take as my text a statement made by James A. Whittaker, M.D., in his article on "Dysentery," in vol. ii. of Dr. Pepper's "System of Medicine," that irrigation of the large intestine and the thorough flushing out of its contents are now admitted as the most valuable method of treatment.

The object of writing this paper is to give practical endorsement to that statement. I have come to the conclusion, after frequent discussions of the subject, and from personal observation, that this method is not in such general use as one would suppose from such unequivocal testimony as the doctor brings forward. I desire to record my success with it after repeated trial, and trust that those who have made use of it will add their testimony to that already recorded, and that it may prove to all, as it has to me, a remedy to be relied on as sure and prompt in a disease, which formerly, in my experience, has won the reputation of rheumatism, in its odium and intractability.

To be of use, the enemata must be large and frequently repeated. In some cases I have used them at first every two hours, increasing the interval with the improvement; in others every four hours. As to the quantity, that must be measured, to some extent, by the tolerance of the patient. I find that it is well for the physician to demonstrate this. People, as a rule, have a mistaken idea as to the capacity of the large intestine. If verbal directions simply are given, at the next visit it will be found that a few ounces are announced as a result of the trial. The measure of the capacity seems to be based on that of the external aperture, and the idea of danger is coupled with the introduction of more than a pint: a point well taken in chronic dysentery perhaps, where, no doubt, it would be dangerous to distend the walls of the intestine, weakened as they are liable to be by deep ulceration. But if the case be seen in the early stages, the quantity safely used will be measured by pints instead of ounces. The capacity of the large intestine, as a rule, is about six pints. Three or four pints will suffice in this treatment.

As to the temperature of the water, moderate warmth, as recommended by Dr. Roberts Bartholow, from 100° to 105° , I find most acceptable, except possibly in the first or second administration, when quite low temperature appears of benefit. I see to it that the water employed is distilled, when that can be obtained; otherwise boiled.

As to the instrument used, the common Alpha syringe, manufactured by Parker, Stearns & Sutton, serves good purpose. The fountain syringe needs to be used with care. People little know of the great hydrostatic pressure it brings to bear. The hand on the syringe-bulb is a better guide. The position of the patient on the right side, with the back to the nurse, is the most convenient. The introduction of the first few ounces is met by the patient with loud protests: these decrease with assurances of safety and benefit. I have never used medicinal substances in the water, except in one case, where alum proved of benefit. In chronic cases I have never pushed the treatment. I imagine that very few chronic cases will exist if the cases are treated locally from the beginning. So much for the local treatment. I use it from the first and persist in it. Its annoyance decreases with the repetition.

Now as to general treatment: I confine my patients to bed. I deprive them of food as much as possible, whiskey (well diluted), in small quantities, being allowed; this is food, is supportive, and allows the lower canal much needed rest. Milk I do not use unless peptonized, and then only in very small quantities. Prepare it as you may: the excrement will be large if the quantity taken is. I rarely allow

more than a quart in the twenty-four hours. If the patient will rest without food for forty-eight hours, I find it of great advantage. The fast, as a rule, is not a difficult one, the appetite being in abeyance. The liquid preparations of beef I do not use in intestinal involvement; with their concentrated salts they act as an irritant: they distress more than they benefit. Eggs, scraped beef, or, when these are objected to, the steak, roast and chop with bread, make up the dietary.

Certain medicinal measures by the mouth are of advantage. I administer a cathartic at the commencement of the case. If there be nausea, calomel in small and frequently repeated doses is the drug chosen, otherwise magnesium sulphate. Salol is then ordered and opium in some form if the pain demand. The former drug I esteem. I have used with advantage also naphthalin and hydrarg-corrosiv. chlorid.

As I said before, this treatment has given entire satisfaction in cases severe and mild. Let me relate one of the severest. During the past summer was the time of its occurrence. Its onset presented symptoms of such gravity as to excite just apprehension. The patient was a delicate lady. I was called to her in the night shortly after the attack began. She was in the fourth month of pregnancy. Temperature 105° ; pain intense; vomiting; pulse very rapid; passages small and frequent, composed of blood and mucus. I announced the treatment, and was requested to see to the case personally until improvement should be marked. The patient retained two quarts of water by the second enema. Distilled water was used in this case. She was convalescent in four days and well in a week. No food was allowed for three days; she received whiskey alone. I was on hand to see to the case. Much of the first three days was spent in watching the patient. Calomel in one-twentieth grain doses quieted the stomach; morphia sulphate, by hypodermic method, the pain. Salol, in five-grain doses, was given after the third day, when food was resumed. The condition of pregnancy caused additional alarm here. A number of cases I might record with similar good success. They would simply tire you and occupy valuable time unnecessarily. During the past month three fulminating cases came under my observation, and the record of success was the same with them.

To sum up: The treatment is simply the application of the antiseptic method—the rational and scientific treatment of a disease which exhibits itself mainly as an inflammation of the large intestine. There the havoc is wrought, much of the constitutional disturbance, I believe, being due to the absorption of septic products in that quarter which

result from the inflammatory process. The enforcement of cleanliness removes these, removes all irritants, reduces congestion—in fact, fulfils all the indications, and most of all proves practically what it presents to our minds theoretically.

A review of my past experience shows difficulty and discomfort with the ipecac treatment—in some cases alarming exhaustion.

Opium, notwithstanding the praises Dr. Austin Flint, Sen., has expressed as to its efficacy in this disease, I reserve as an adjunct, simply to quiet and relieve my patient. It has deceived me into the belief of convalescence when the case was progressing under it as a mask. Turpentine for a time may do good. It militates against the welfare of the stomach and the kidney, and is very apt to be cast into the wastepipe by the patient soon after the physician's departure. Occasionally I have had a measure of success with it.

Of the use of suppositories I would say that in this form I have employed iodoform with more advantage than any other drug. Its field of application appears narrow.

It may be asked if I have used the irrigation-treatment in the case of infants. My answer is that my success with it in their case is as marked as in that of adults; in fact, I employ it to some extent in all their bowel disorders. A few ounces suffice with them, and do not require very frequent repetition. The characteristic of medicinal measures employed by me in their diseases is simplicity almost to a fault. I will say, in addition, that in this disease, as in most of the acute troubles occurring in the digestive tract during the first year or so, the withdrawal of food for a time, or its diminution to a minimum, has proved of the greatest advantage. As to the diet in bottle-fed infants in sickness and in health, sterilized cows' milk with the cereals rice, barley and wheat have given better results, in my experience, than any of the "infants' foods" so largely manufactured at this present time. In addition to this, as a prophylactic measure, the protection of the surface of the body with woolen garments, light in texture, from one year's end to another, is a *sine qua non* in this climate, marked by such wide variations of temperature, from which not even the summer months are exempt.

DISCUSSION.

Dr. McCORKLE.—Mr. Chairman, I have listened to the paper with a great deal of interest, it being one that should interest us all, because we are meeting this disease at different seasons of the year, and like many other diseases, we have many remedies recommended for its cure.

I am a little sceptical of any special line of treatment in this disease, for it appears that its successful management is still a question. I am confident, however, that the doctor's paper to-night bears testimony to a good line of treatment. I remember having had a case of dysentery a number of years ago which I was unable to treat by any other means; I called in Dr. Wallace, who suggested the use of the cold water with the most marked results. The fact is that whether the water is cold or hot is a matter of little importance; for, as has been shown, the action on the organism of cold and heat is about the same, and the ultimate action of water in this disease is largely a matter of cleanliness of the diseased bowel.

I fully approve the doctor's measures as far as the diet is concerned. I believe that many of our patients are over-fed; we give them food which leaves too much residue, which acts as an irritant. We must remember that it has been proven almost beyond a doubt that dysentery is a self-limited disease. The late Prof. Flint made extensive observations on this point, and found that a large number of the cases recovered without any treatment; so that the value of any line of treatment must be estimated somewhat by the natural history of the disease, but much can be done in the way of hygienic management.

Every patient suffering from dysentery should be kept absolutely at rest, and not allowed to have stool save in the horizontal position. This is very important. Rest, attention to diet, and the hygienic surroundings all contribute to the patient's comfort and recovery; and, although I am not inclined to depend on any specific line of treatment, we have many remedies that will aid materially the measure advocated in the paper.

At one time castor oil was used, first, to eliminate from the bowels any fecal accumulation, and then by its astringent or sedative action to keep the bowels locked for some time. This is endorsed by many.

Others believe in the aconite treatment, and it has most enthusiastic admirers and advocates. This remedy is especially applicable to those who are strong and vigorous, and only in the early stages of the disease; and yet as we read the published articles advocating certain lines of treatment, we are led to believe that they are applicable in any and all stages.

Then we have the saline treatment, *e. g.*, sulphate of magnesia. This has just as many advocates. This salt suggests itself to the practitioner because of its non-irritating qualities. It tends to promote osmosis and to deplete the congested vessels of the colon, pouring out from these vessels the watery portion of the blood, and thereby wash-

ing out the bowel. If we add to the saline a little dilute sulphuric acid and a small amount of opium, in the form of sulphate of morphia, we have a good treatment for the first stage, but not suited to the stage of ulceration, or after sloughing commences.

The opium treatment justly deserves consideration. It is valuable in connection with all other lines of treatment, and acts in the first place by soothing the patient, and taking away that element of shock, which is so common in most diseases of an inflammatory nature. It may be said that the shock is very slight, but long-continued shock causes exhaustion, and this is a prominent danger in dysentery, and the opium in small doses becomes a stimulant to the heart.

The author of the paper speaks of opium as allowing the disease to go on masked under its influence. It will go on sometimes under any treatment, but the skilful practitioner, understanding the action of opium, will never be deceived under such circumstances. He knows well its anodyne action, and knows also that by relieving the pain he relieves the congestion of the inflamed part.

In addition to the above lines of treatment, there is still another which I fully endorse, and which can be used with irrigation and with many other forms of treatment, namely, the ipecac treatment, although it has not the confidence of American physicians. The emetic action of the drug is the one chiefly associated with its use, but on investigation it is surprising to find how numerous are its non-emetic uses.

The first effect of ipecac in the treatment of dysentery may be vomiting, about which we need feel no anxiety. The first dose may cause vomiting, subsequent doses are almost always retained. The use of this drug is only indicated in the early stage, before the bowel begins to slough or the membrane to break down. This is the only time to use the ipecac treatment, and the remedy can be used in large doses.

It is well known that ipecac is a direct hepatic stimulant, and acting on a portion of the intestinal tract, far above the seat of inflammation, it carries down through the diseased bowel a large amount of bile, this natural secretion of the liver being the most soothing agent possible to the inflamed colon, and also the best disinfectant that can be used. Ipecac may be combined with a small amount of opium, just sufficient to soothe and comfort the patient.

We have in addition to these methods the antiseptic treatment in the form of the bichloride of mercury in minute doses, which we know to be excellent in the treatment of colitis in children, acting perhaps largely as a disinfectant. Naphthalin is also useful as a disinfectant;

in fact, any non-irritating remedy that will tend to relieve or prevent putrefactive changes is of value; for in dysentery, when the large amount of material poured out and placed under favorable conditions for putrefactive change, and the products of decomposition act as irritants to keep up the disease already begun.

Thus we have a number of lines of treatment, and each and every one has its advocates, and is useful at certain periods of the disease. Irrigation will go with any of them. and, as I said before, I endorse it most heartily, having used it for years.

But, in closing, I want to call the attention of the Society to one fact in the treatment of dysentery. It is an anatomical one and should be ever borne in mind. The large intestine has the poorest blood supply of any mucous membrane in the body, and whatever remedies may be used must be chosen with special reference to the blood supply. If depleting measures are employed for too long a period the blood supply to the part suffers. The same is true of the saline treatment, and the blood-vessels to a certain extent are drained by white bleeding. When the blood-vessels are impaired, ulcers are liable to form in the second and third stages of the disease, from want of proper nutrition, due largely to the lack of blood supply. If ulcers occur, I am partial to a remedy which has been spoken of to-night, namely, turpentine. I have had better success with it than with almost any other remedy in the chronic forms of dysentery.

A good combination is quinine, turpentine and opium, with a little oil of cinnamon added. Not enough opium to produce its anodyne effects, but simply sufficient to sustain and soothe the patient.

Quinine is another important remedy which must not be overlooked. In malarious districts physicians depend largely upon quinine in large doses, in the treatment of this disease. If there be a malarial element present, the dysentery will continue while that poison is in the organism. Here, quinine is the sovereign remedy. It acts, not alone as an anti-malarial agent, but it stimulates the terminal blood-vessels, lessens the formation of pus, and sustains the strength of the patient.

In view of the many remedies at our disposal in the treatment of dysentery, our course of treatment should be governed by the stage of the disease and the condition of the patient.

Dr. EVANS.—I rise to thank Dr. Fairbairn for calling attention to what I believe to be a very valuable means of treatment for dysentery, one which it is not intended shall displace the recognized remedies, but simply to act as an adjunct in the line of scientific cleanliness.

During the past summer I had occasion to treat a member of my

own family, an infant, for dysentery; the discharges were so acrid that the nates, etc., soon became inflamed and excoriated. In order to relieve the local conditions, I made use of warm vaseline injections into the rectum and colon, preceded, however, by thorough irrigation of the parts with warm water. The result was all that could be desired. Whether it was due to the vaseline, to the warm water, or to their combined influences, however, I was unable to decide.

When putrefactive change occurs in the passages or cavities of the body, our first duty is to wash out its irritating and poisonous products. And it seems to me that this measure to which Dr. Fairbairn calls our attention is designed to accomplish that purpose in dysentery.

I believe no reference is made in the paper under consideration to a line of treatment that has been in use many years, namely, injections of starch-water with laudanum. If I remember rightly, it was considered at one time to be *the* treatment; and so far as rectal injections for dysentery were concerned, the only treatment in that manner in vogue.

Dr. WALLACE.—I am very glad that this matter has been brought up this evening. I have used the cold-water treatment for certainly fifteen or twenty years. I have never used the hot-water. In some cases I have used ice water in adults and children alike, and have been delighted with the results shown.

There is also one article not referred to this evening—and I only refer to it to condemn it—and that is bismuth. I used it years ago, and I believe it did more harm than good.

In the first place, it interferes with digestion, and, in the next place, to have it do any good you must give it in such quantities as to white-wash the whole length of the canal. Notwithstanding all this, I know a great many use it and are pleased with its results.

Dr. GROVER.—I have used the hot-water treatment for dysentery for a number of years, and I think, in the vast majority of cases, I have used it with fair results. I have never used cold water, as has been spoken of here this evening. It seems to me, however, that the action of the two would finally be very much the same. I shall not attempt, however, to go over the paper as read; I will simply state that in my personal practice I have adhered very closely to such remedies as Dover's powder, accompanying it with large doses of bicarbonate of soda internally. I think, however, that the tincture of gelsemium is good for tenesmus. If you can get a good preparation from the green root, I believe it lessens the tenesmus about as well as any remedy I have ever used. You must, however, give it in such

doses that you will get its physiological result; and it must be watched, of course, by a careful physician in order that it is not carried too far.

I am confident, like many others, that dysentery is frequently accompanied by malaria, and, in fact, I think that malaria is very frequently one of the prime causes of dysentery; and when I am not fully confident that my patient is surrounded by such malarial influences as would determine the disease, I usually give, every other day at least, a fair dose of quinine, to be sure to reach any malarial cause of the disease; it certainly would not do any harm, at any rate. In the chronic form of the difficulty, in my personal practice, I have adhered very closely to the giving of the solution of the per-nitrate of iron with cod-liver oil, and I can say from my own experience that it has worked well.

Dr. BRIGGS.—The treatment last spoken of—the injection of starch—is a very good one, and I have often used it. I use ice-water with starch, and, if needed, a little opium. I think we can always use ipecac internally. I think it acts by stimulating the secretions, and so washing out the bowels. Dysentery is probably a disease produced by many causes, and the treatment should depend on the cause if possible. Largely it is due to malarial causes and some error in hygiene; now-a-days I do not think we see much dysentery. I think the better way to use quinine is to use it in the oleate, combined with turpentine. It is generally vitiated secretions that cause dysentery, and that is the reason why ipecac is valuable, by stimulating the secretions and washing out the bowel.

Dr. FAIRBAIRN.—I am very much pleased to have heard from so many members of the Society. It is gratifying to bring forward a subject which excites discussion of the kind we have heard to-night.

I agree with Dr. McCorkle that the medicinal treatment of dysentery cannot always be the same. The cause and complication are not always the same; the measures to combat these must differ therefore.

My aim was to show that the local, pathological condition could be treated most successfully and promptly by topical measures—irrigation. The medicinal measures which had found favor in my hands in this disease were those the action of which was explained by their antiseptic action—*e. g.*, salol, salicylate of sodium, naphthalin, or hydrargyrum bi-chlorid., etc., and others to relieve special symptoms.

TUBERCULOSIS TESTIS.

BY E. H. WILSON, M.D.,

Visiting Physician and Pathologist to St. Catherine's Hospital.

Read before the Brooklyn Medical Microscopical Society, June 4, 1890.

Tuberculosis of the testicle is not an uncommon lesion, and yet the amount of literature in English on this subject is not great. The older writers found great difficulty in distinguishing between tuberculosis and some forms of chronic diffuse orchitis which presented cheesy areas. It was not until 1882, when Koch demonstrated the causative relation of the bacillus which bears his name, to tuberculosis, that anything like certainty could be arrived at concerning this lesion of the testicle. It was then found that very many of these cheesy areas contained the bacillus, and were undoubtedly tubercular.

The cause (aside from the bacillus) of this affection, varies very much; it may occur in connection with acute general miliary tuberculosis, with chronic miliary tuberculosis in other organs, with tuberculosis elsewhere in the genito-urinary tract, after traumatism or gonorrhœa, and I think we have to acknowledge that there are cases of primary tuberculosis of the testicle, cases at least where the most careful search fails to reveal the presence of tuberculosis elsewhere. Gonorrhœa as a predisposing cause has been studied by Langhans, who found in 52 cases that 14 were preceded by gonorrhœa. Birsch-Hirschfeld found in 60 cases, 11 preceded by gonorrhœa.

Metastatic orchitis with mumps was considered the predisposing cause in one case out of 23 (Rilliet).

In regard to the frequency of tuberculosis of the testicle complicating phthisis pulmonalis, Kocher says (*Deutsche Chirurgie*) that in 18 per cent. of all cases of pulmonary tuberculosis in males, there were tubercles in the testicles. On the contrary, in two-thirds of the cases of tuberculosis of the testicles where autopsies had been made, the lungs were found free from tubercles; this might be accounted for by the small number of cases when autopsies are made before general infection had occurred.

The gross appearance of these testicles varies as much as does the predisposing cause. They are uniformly enlarged, nodular, and upon being incised may be found to contain cavities containing pus and having sinuses, and often communicating with one another.

The gross appearance upon section will vary with the progress of

the lesion. As a rule two areas will be noticed : a peripheral crescentic area containing tubercles and cheesy masses, and representing the epididymis, and another soft, spongy mass representing the testicle. It is very probable that the tuberculosis begins uniformly in the epididymis and extends to the testicle. At first there will appear a small nodule, situated usually in the caput epididymis ; this nodule is hard and gray or grayish-red. Then other nodules appear and these multiply, and finally the whole epididymis and the cells of the canals of the epididymis are degenerated and become cheesy. These nodules coalesce and degenerate, and form abscesses and fistulæ. That portion of the epididymis which is not converted into abscesses is converted into dense hard connective-tissue or granulation-tissue. The same thing occurs in the vas deferens, and as a result we see thickening, dilatation, sacculation, abscesses, etc. In the testicle the nodules are generally larger, white or yellowish-white, and merge rather imperceptibly into the testicle-tissue. These nodules degenerate at their centre and become dense at their edges.

Tizzoni and Gaule say (Cornil and Ranvier's *Pathological Histology*) that the affection begins by a new formation of the epithelium of the tubules. Others say (Wilkes and Moxon) that it begins in the intertubular structure.

In tuberculosis testis complicating general miliary tuberculosis, the tubercles are more apt to be found in the intertubular tissue, while on the other hand, in primary tuberculosis of the testicle, the tubercles are more apt to be found in the mucous membrane of the tubules and in the walls of the tubules.

It is, however, with the microscopical appearances of this lesion that we have to do.

We find that there are two elements in the lesion which we will have to consider separately. In the first place there is a diffuse general orchitis which is associated with the tuberculosis, and in the second place there is a typical tubercular inflammation with the production of tubercle tissue.

There are changes in the interstitial tissue, in the seminal tubules, in the vessels, in the cells of the seminal tubules, and a growth of new tissue. In examining some of the sections which I have placed under the microscopes, you will see that the interstitial tissue is loose in texture and composed of a finely reticulated stroma containing round and branching cells. These cells are for the most part diffusely scattered throughout the stroma, but in places they are aggregated together in masses, and in other places are especially abundant around the

blood-vessels. The seminal tubules are distorted; their membrana propria is markedly thickened, and the cells in the membrana propria have undergone proliferative changes. When we come to examine the cells of the seminal tubules we see a marked change; they are degenerated, granular, detached from the wall of the tubule, and lie, a nucleated, granular mass, in the centre of the tubule; in the centre of this mass may often be seen an opening which represents the original lumen of the tubule. The vessels are changed. Some of them are obliterated and some have thickened walls, and these walls are infiltrated with round cells and their adventitia cells are increased in number.

These are the changes of chronic diffuse orchitis associated with tuberculosis, and they are more or less constant factors in the lesion. We see the same thing in tuberculosis of other organs, for instance, the kidney; here also we have chronic diffuse nephritis in addition to the tubercular inflammation.



FIG. 1

When we examine the other element in the lesion, the tubercular portion, we see a typical tubercular inflammation with the production of new tissue, composed of a basement substance and of cells. There is a dense round cell infiltration, and these round cells are in places aggregated together in large masses of a more or less circular shape; the centres of these masses have undergone degeneration and the cells have lost their individuality and refuse to stain. Among the cells at the periphery of these masses are many giant cells; large cells with homogeneous centres and peripheral nuclei, which may be situated intra or extra-canalicular.

I have been able to demonstrate, also, the presence of the bacillus tuberculosis in these masses.

In regard to the origin of these cells, it is probable that part of them are transformed leucocytes, part of them formed from the con-

nective tissue cells, and part of them from the epithelial cells of the seminal tubules. Langhans says¹ that the invasion of the epithelial cells by the bacilli cause them to undergo karyo-kinesis, and thus to contribute, in the form of epithelioid cells, to the formation of the tubercle.

The stroma of this new tissue is probably derived largely from the giant cells and from the branching cells of the connective tissue; this stroma is usually better developed than in tubercles in other organs. Some of the giant cells have processes which unite with the stroma of the surrounding tissues; we see, also, near the centre of the tubercle a few large stellate cells, with long, slender, rod-like nuclei and a pale cell substance.

In the meshes of the anastomosing processes of the giant cells and the stellate cells the other cells are contained.

Near the centre of the tubercle the stroma is more granular.

The elements of the membrana propria also contribute to the formation both of the stroma and the cellular elements of the tubercle.

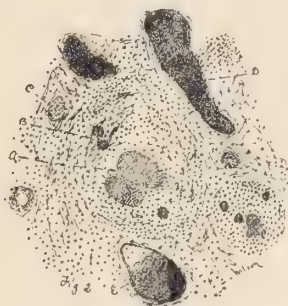


FIG. 2

In the particular testicle from which these sections were cut, it can be noticed that the giant cells are very abundant; some of these giant cells are imbedded in the stroma without seeming to take any part in its formation, while others are evidently a part of the basement-substance. It has been observed that, as a rule, where there were large numbers of giant cells, there were small numbers of bacilli, and where there were many bacilli, very few giant cells were observed. It has been observed also that in old cases, where the tubercles had existed for a long time, the bacilli were very seldom found.

¹ Deutsche Chirurgie, 1883: "Die Krankheiten der Männlichen Geschlechtsorgane."

I have, in this case, searched carefully through many sections, and only found a few bacilli.

It would seem that notwithstanding the difficulty of finding the bacilli uniformly in the tissue, upon their discovery depends our ability to make a positive diagnosis.

In some cases of chronic diffuse orchitis where there is a large cell proliferation, much thickening of the membrana propria, degeneration of the epithelial mass in the centre of the tubules, and even the formation of giant cells, that such an obliterated tubule, a so-called pseudo-tubercle, may very readily be mistaken for a tubercle granulum; but when in addition to all these we are able to discover the bacillus, the diagnosis is at once cleared up.

FIG. 1.—CHRONIC DIFFUSE ORCHITIS.

a, Seminal tubule, with thickened membrana propria and nucleated granular mass in the centre of the tube.

b, Round cells infiltrating the interstitial tissue and in places aggregated in masses.

c, Increase in the interstitial tissue, showing the reticulated stroma.

d, Original lumen of seminal tube.

e, Blood-vessels with thickened walls and proliferation of adventitia cells.

FIG. 2.—A TUBERCLE GRANULUM.

a, Central degeneration.

b, Giant cells.

c, Obliterated blood-vessel.

d, Blood-vessel containing blood and a few free round cells.

e, Blood-vessel partly empty, partly filled with blood and granular detritus.

HYOSCYAMINE.

BY R. G. ECCLES, M. D.

This alkaloid has lately been ushered into unusual prominence among Brooklyn physicians by a recent death, the alleged error of a drug-clerk, and the coroner's trial that followed. The physician had ordered, as a hypnotic for the deceased, capsules containing, in each, one-eighth of a grain of Merck's amorphous hyoscyamine and the same quantity of sulphate of morphine. The drug-clerk was charged with having substituted Merck's crystalline hyoscyamine, which substitution was supposed to have caused the patient's death. The process of reasoning by which this last conclusion was reached is obvious to all physicians. It is something like this: Since crystals are much

purser than the amorphous mass from which they are obtained, and since the strength and toxic power of the mass depends upon the abstracted crystals plus the same material that refuses to crystallize and not upon the inert extractive that contaminates the amorphous mass, therefore the crystals are by far the most potent and dangerous. In fact, this is the rule in the majority of cases; but unfortunately for such logic, it fails in this case. What is left does not happen to be inert extractive plus uncrystallized hyoscyamine, but the last-named substance with another and totally different alkaloid of as great or greater power.

The last (16th) edition of the "United States Dispensatory" says of it that "various observers have noted that the impure amorphous hyoscyamine is more powerful than is the crystallized alkaloid" (p. 803). Prof. H. C. Wood's experiments showed that its mydriatic effects were much more rapid than those of atropine, and still more so than those of hyoscyamine (*Therapeutic Gazette*, 9, 1: 594, 760). Emmert and Hirschberg in 1881 obtained mydriatic effects from quantities much smaller than they could of either atropine or hyoscyamine ("Prescott's Organic Analysis," p. 343). Emmert fixes the quantity at one-fifth of that of atropine. The testimony of one of the medical experts before the coroner's jury rather tended to confirm these conclusions. Eight or ten years ago he had given very much larger doses of amorphous hyoscyamine than of late, going almost as high as a grain at a dose. Then the product was the so-called resinoid and contained all of its hyoscyamine. Now it is mainly composed of the alkaloid hyoscyne, the hyoscyamine being removed from it by crystallization. Why the doctor, in view of his own reported experience, expressed a fear of the hyoscyamine in its crystalline form in doses greater than one-seventy-fifth of a grain was rather strange. It seemed as if he thought that the removal of crystallized hyoscyamine from the resinoid was like the removal of strychnine from brucine, when, in fact, such evidence as we at present possess points in the reverse direction. The weaker alkaloid crystallizes out, leaving that which remains the stronger for its absence. In no alkaloids are there so great discrepancies in the reported doses as these two show. Usually both are fixed at from $\frac{1}{120}$ to $\frac{1}{60}$ of a grain, and yet the records show that as high as one-fourth of a grain can be given with safety except where contra-indications exist. Indeed, Gnauck, in a paper read at the September, 1882, meeting of German Psychiatrists at Eisenach, and reported in their proceedings, fixed the dose for internal use of the *pure crystallized hyoscyamine* alkaloid at from one-sixth to four-fifths of a grain. The

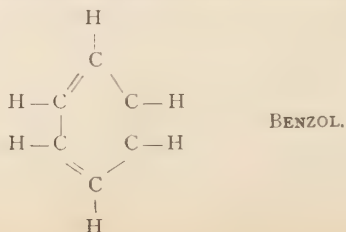
latter figure is more than twice the quantity taken by the deceased in both of his doses. A report of this can be found in *Merck's Bulletin*, November, 1889, p. 86.

The "United States Dispensatory," which fixes the highest dose of *amorphous hyoscyamine* at one-sixtieth of a grain, tells of one-quarter of a grain, being taken at once, with good results. Thus is the reader confused by conflicting statements. In the *Formulaire des Nouveaux Remèdes*, 1888, p. 176, MM. Bardet and Egasse fix the dose of amorphous hyoscyamine at one-twelfth to one-sixth of a grain. They add, however, that it may be gradually increased up to three-fourths of a grain. As early as 1873 Oulmont, in the *American Journal of Medical Science* (April, 1873, p. 528), fixed the dose of hyoscyamine at one-thirtieth to one-fifth of a grain. This was before its true composition and distinction from hyoscine were known.

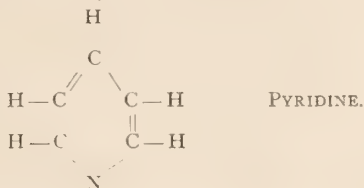
Atropine is certainly the most dangerous of the mydriatic alkaloids, and a number of cases are on record of adults taking a grain without fatal results. (*Vide* "Taylor's Treatise on Poisons," p. 732.) One-and-a-half and two grain doses have been known to kill. If any smaller amount of atropine, hyoscyamine, or hyoscine has proven fatal, the report has escaped the attention of the writer.

These three alkaloids are as closely related chemically as they are therapeutically. Their common formula is $C_{17}H_{23}NO_3$, they being someric bodies. In decomposition they all give up tropic acid, showing that they are tropates, but, while hyoscine produces pseudo-tropine, hyoscyamine and atropine produce tropine. This last product is one of the most interesting substances known to students of organic chemistry, because of its being an easily traced derivative of pyridine, and forms the first piers of the bridge that is yet destined to lead us to the synthetic production of quinine, morphine, strychnine, cocaine, aconitine, etc.

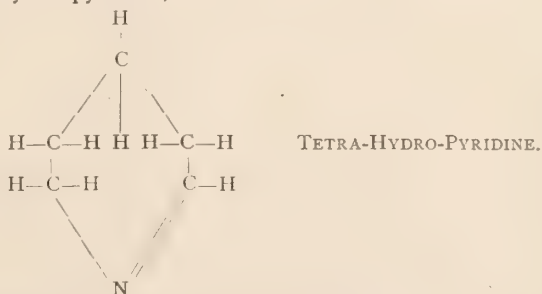
Ladenburg, who first separated hyoscine from hyoscyamine and showed what amorphous hyoscyamine really was, worked out the rational formula of atropine, the type of this group. The changes can be best shown graphically. Beginning with benzol, the near relative of aniline and other coal-tar products, we have this molecule:



This becomes pyridine, the probable starting-point of all alkaloids, ptomaines, and leucomaines. By replacing in the ring of carbons a nitrogen atom, N, for the C—H, we have:



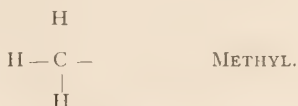
By successive steps this has four more hydrogen atoms added, thereby forming tetra-hydro-pyridine, thus:



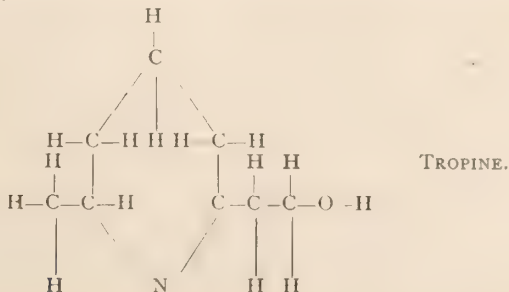
If now we remove two hydrogen atoms and replace one by the ethylene hydroxyl radical



and the other by the methyl radical



we get, as a product of the changes, tropine, the base of hyoscyamine and atropine, thus:



of Matthews should be supplying a brand of soda to the market. In such a case he would put up a solution of Matthews' soda in water. This of course would be avoided by the doctor prescribing by the proper title, viz., "carbonic acid water," and not "soda water." In the case of Merck's amorphous hyoscyamine a literal interpretation, that any dictionary would justify, would be the conversion of the only hyoscyamine Merck makes into an amorphous form by solution. Of course such an act would violate the doctor's intent, and no druggist, after informing himself of all the facts, could justify himself in this. But with rare and seldom prescribed drugs it is sometimes an exceedingly difficult or really impossible thing to get the facts. Whatever the circumstances or motives under which the drug-clerk acted, he could readily have justified himself before any court on the plea here given, and at once thrown upon the doctor an equal share with himself in the results of his acts. The order as written was fairly interpretable literally as meaning hyoscyamine made by Merck rendered into an amorphous form. The order could have been written in such a manner that no such error could possibly occur. Had the doctor ordered hyoscine, either chemically pure or impure, as required, it would have been subject to but one interpretation. Since he did not take every precaution against mistake, he would have stood before the law in the same relation as an employer who exposes his employees to danger without proper guards and precautions. The doctor would certainly have had to shoulder the damages.

If the hyoscyamine, which it is alleged was given to the deceased, had been really ten times more toxic than hyoscine, it would have been a sad affair indeed. As it was, we had ample proof that the drug did not kill. Thus was the doctor saved from a trial that could only have ended seriously for him. The dose, while a large one, of either hyoscine or hyoscyamine, could, under no circumstances, be proven to be a fatal one. Not one of the mydriatic alkaloids has ever been known to kill an adult in less than twelve times the quantity given at once or six times the total amount taken in the two doses. Besides this, the physiological antidote, morphine, was administered in equal amount, thus practically reducing even this. The patient was a man who might have been expected to die in just such a manner as he did. The drug was one that even under extraordinary circumstances might have been expected to be totally eliminated from his system within six hours, while he lived eleven hours after taking the last dose. As long as any of the drug remained in his system the mucous membrane of the mouth would be dry. Long before his death, when the consulting

physicians saw him, his mouth was moist. How, then, could the drug have killed him? Some one suggested that he might not then have died but for the shock it gave his shattered constitution. This is a two-edged sword that cuts both ways. If the milder hyoscyamine produced such results, it would seem to be a fair inference that the stronger hyoscine would have done the same.

There were those who supposed that an autopsy should prove whether or not the drug killed him. It might have shown a diseased condition of some organ adequate to account for his death. It could not, in a man of his habits, have shown that he was poisoned by hyoscyamine. Capillary and venous hyperæmia of the stomach and intestines are mentioned by Lewin as the only signs of such a death, and they are not prominent. This patient would have had such signs anyway. Had the poison been found in his stomach, it would have been proof that he did not die of it, since the effective amount would have been reduced by just the quantity there discovered. As the dose was not large enough to kill ordinarily, the finding of some of it in the stomach would be proof that absorption was so slow and the quantity absorbed at any given moment so minute, that to assume a toxic power therefor would have been simply ridiculous. The newspapers at first positively asserted that the post-mortem supplied proof that the drug killed the patient. An editorial in a leading daily said that "an official autopsy showed that death resulted from narcotic poisoning." All this, of course, had to be retracted when the true report of the autopsy appeared. But this was not the only point the daily papers distorted. They had the patient die two instead of eleven hours after the second dose. From the same editorial we learn that the doctor "prescribed capsules known as Merck's amorphous, which contain one-eighth of a grain of hyoscyamine, or henbane, in a powdered state." And, again, that the druggist "used crystalline instead of powdered hyoscyamine. The drug was then, so it is charged, "ten times stronger than when powdered." What an enormous difference he must have thought powdering produced! This editor evidently knew that amorphous literally meant shapeless, or not crystalline, when he took powdered to be synonymous. The reporters did not even know this. The word "amorphous" seemed a perfect shibboleth to them. Here are a couple of quotations from one report:

"Prescribed capsules containing hyoscyamine and Merck's a rorthous. The latter preparation is a powder."

"Instead of the preparation known as Merck's arorthous, the clerk had sent to the house, it is alleged, Merck's crystalline, a drug ten times more powerful."

Those persons consulted by the reporters as toxicological and chemical experts, if quoted correctly, made some remarkable assertions. It is probable that the reporters got their sayings as crooked as they did the general facts of the case. One doctor is reported as having said that one-eighth grain of crystalline hyoscyamine would put the patient to sleep forever. He also asserted that "the famous Dr. Merck, of Germany, is the only manufacturer of this substance; that according to the best authorities one-fiftieth of a grain would kill, while half of that small fraction would kill at once." When asked to describe hyoscyamine, he was reported as replying in the following words: "Without going into its essence, and for the sake of perspicacity, I may say it is yellowish white in color, and while crystalline is a dark, resinous mass with a strong musky odor. One is a fine powder; the other, as its name implies, is what I may roughly term small bits: and they are so unlike that it is the easiest thing in the world for an ordinarily intelligent drug-clerk to differentiate as between them. The crystal is the alkaloid, the active principle; the other is a preparation from it."

Such is an illustration of newspaper science. Whom he could have meant by "the famous Dr. Merck" is a mystery. There is a firm in Darmstadt, Germany, by the name of E. Merck. It has borne that name since 1668. There are six descendants of the original Merck now members of that firm, and three of them are doctors. This firm is not the only one that makes this drug. One-fiftieth of a grain would not kill, and half of that small fraction, so far from killing at once, might with safety be given to a small school-boy. The description as given is incomprehensible and misleading. Physicians, when interrogated by reporters, should, if they wish to save their reputation, either write out what they have to say, and so save mistakes, or insist upon having the notes read for correction.

Hyoscyamine sulphate is the only officinal form of hyoscyamine, while hyoscine is not represented in the present Pharmacopœia. Both these alkaloids and their bromides have been proposed for admission in the new revision, but are objected to by some members of the committee. It is to be hoped that, whether introduced or not, the title amorphous hyoscyamine be laid at rest, and hyoscine venale take its place for the sake of accuracy. Between the crude resinoid containing both alkaloids, the ordinary so-called amorphous hyoscyamine, the chemically pure hyoscine, and the crystalline hyoscyamine, there is great room for confusion. The resinoid, the impure hyoscine, or, as improperly named, amorphous hyoscyamine, and the chemically pure

hyoscine of Ladenburg are all syrupy looking masses, and might easily be mistaken for each other, although their doses vary considerably. The first contains all the hyoscyamine, the second traces of it, and the third none.

The salts of hyoscine are crystalline, and do not therefore resemble the alkaloid. None of them have been used as much in private practice as the extracts and tincture of hyoscyamus. In asylums they are used pretty freely, and it was in such places where as large doses as one-eighth to one-half a grain were first given. It required these quantities to produce their hypnotic effect. The ordinary dose of all of them is about one-sixtieth of a grain.

It is no unusual thing to find children suffering from hyoscyamine poisoning here in Brooklyn about this time of the year. Jamestown weed, in its two forms of *Datura stramonium* and *D. tatula*, are found in almost every vacant lot in the city. They occasionally eat the leaves, flowers, or fruit, with unpleasant or even disastrous results. *Hyoscyamus niger* is also occasionally found as a weed in gardens. Where such poisoning occurs, the best emetic to use therefor is apomorphine hydrochloride, and the best physiological antidotes are morphine, chloral, and pilocarpine hydrochloride.

ACCIDENTAL HÆMORRHAGE.

By JAMES L. KORTRIGHT, M.D.

Read before the Medical Society of the County of Kings, April 15th, 1890.

I desire to present the histories of four cases, and with these for a text, to lay before the Society a few points in the symptomatology, causation, diagnosis and treatment of accidental hæmorrhage. My apology for recounting these histories lies in their rarity and in their gravity. For in 22,498 deliveries in Guy's Hospital, this complication occurred but three times; and out of 106 cases of this condition collected and analyzed by Goodell, 54 mothers and 101 children perished.

CASE I.—Mrs. W., III para. When eight and a half months gone in her pregnancy, while going up-stairs, she suddenly felt violent foetal movements and was instantly seized with intense pain in the uterus, nausea and faintness. She herself noticed a fulness in the epigastrium. Labor pains came on strongly after three hours. The os was very rigid, but delivery was accomplished, unaided, in about four hours more. The child was dead. The placenta and about a

quart of clots adhering to it were delivered about three minutes after birth. Throughout the labor the uterine contractions were extremely painful.

CASE II.—Mrs L., XII para. When at term, the patient was taken with diarrhoea and vomiting. While straining at vomiting, blood suddenly began to gush from the vulva. Half an hour later, pains came on and delivery was accomplished unaided in about four hours. The child was macerated, the bones of the skull were loose. With the placenta came away a large mass of clots.

CASE III.—Mrs. M., twenty-five years, IV para. This patient had borne four children in five years. At the time of the birth of the second she suffered from albuminuria. When pregnant eight and a half months, while walking in the street, as she was stepping upon the sidewalk from the crossing, she suddenly felt faint and suffered from a sudden intense pain in the back. She was able to walk another block to her home, and went immediately to bed. Eighteen hours later she was found to have a pulse of 116, to be pale and anæmic and lethargic; and to have suppression of urine and general œdema. There were feeble labor pains, but the os was dilated to the size of a half dollar. The uterine tumor was very tense and reached to the ensiform cartilage. On consultation, it was decided to empty the uterus as soon as possible. When the membranes were ruptured the liquor amnii was cold to the touch. When dilatation was completed, the forceps were applied and the child easily extracted. The placenta was loose from its attachment and followed the child immediately, accompanied by a large mass of clots and the most profuse hæmorrhage. It was impossible to make the uterus contract, and the woman was dead in half an hour. The child had apparently been dead about three days.

CASE IV.—Mrs. S., twenty-four years, II para. Patient had a child twenty months old. This child fell down-stairs when its mother was eight and a half months gone in her second pregnancy. The mother was very much alarmed and excited, and immediately was seized with severe pain in back and left side, followed in a few moments by vomiting, restlessness, pallor and attacks of syncope. After five hours blood commenced to flow from the vulva in an intermittent stream. I saw her first twenty-two hours after the child's fall. At that time the abdomen was tense and painful to pressure; the uterine tumor extended to the ensiform cartilage, the os was of the size of a silver dollar; there were feeble labor pains every six minutes: the membranes were unruptured; the vertex presented in the third position; the pulse was 132; the patient was flowing between the pains. The membranes were ruptured, and in consequence the pains became stronger, the pulse came down to 104, and in two hours the head was

lodged in the vagina. Ergot and brandy were given by the mouth and hypodermatically; the limbs were bandaged and the head lowered. Hot water and tincture of iodine were provided. The forceps were applied, and the child delivered with not more than ten pounds of traction. Immediately following the child came the placenta and a mass of clots as large as an adult head. After birth, there was absolutely no uterine contraction. The uterus illustrated exactly the classical description of a wet rag. Hot injections of a dilute solution of iodine directed against the fundus had the effect of contracting only the vagina. The abdominal aorta was compressed and the uterus squeezed between the two hands, one within the vagina and the other upon the abdominal wall. Many hypodermics of ergot were given. Before preparation for transfusion could be made, the woman was dead. The child of course was also dead.

Perhaps I might add somewhat in self-justification, that all of these patients were strangers to me and were seen for the first time after the hæmorrhage had begun. For the husband of the first patient stopped me as I was driving by the house; the second engaged a midwife, who fled when she saw the hæmorrhage; the regular medical attendant of the third was out of town; and the fourth I saw in consultation. The treatment of the third case was similar to that of the fourth.

Hæmorrhage during the last months of pregnancy, when not due to placenta previa, is called accidental. When the blood flows from the vulva it is called frank or apparent accidental hæmorrhage. When it collects between the placenta and membranes and the uterine wall, causing a more or less distinct bulging at that point, the condition is called concealed accidental hæmorrhage. The blood is poured out from a ruptured sinus in the maternal portion of the placenta. It collects at the point of effusion, forming a secondary tumor upon the general uterine tumor; or it dissects its way along the placenta and membranes, enlarging the bleeding space and coagulates within the uterus distending it symmetrically; or the blood finds its way through the os and gushes from the vagina. The placenta is more or less lacerated, and some of the sinuses leading to the umbilical vein are opened, so that foetal blood is also effused. Thus the child is destroyed partly by hæmorrhage and partly by diminution of its nourishment derived from the lessened attached area of placenta. The effused blood seldom if ever penetrates into the amniotic cavity; for the fluid within the sac transmits pressure equally in all directions and thus offers great resistance to rupture by the large surface of the effused blood. The uterine wall gives way before the membranes can be ruptured in this manner. It is claimed also that the uterus is weakest at the placental

site. If this be so, an additional reason is found for the formation of a tumor upon the uterine surface. This tumor may become so large as to lead to rupture of the uterine wall either of its peritoneal coat or of its entire thickness. Such is the mechanism of some cases of so-called spontaneous rupture of the uterus. For many years it was claimed that concealed hæmorrhage was impossible and that a beginning effusion between the uterus and placenta would inevitably cause labor. But experience has proved that the clot so rapidly paralyzes the uterine muscular fibre by over-distension that labor comes on very imperfectly or not at all.

Accidental hæmorrhage is rare before the eighth month of pregnancy. The majority of the cases have occurred within the last four weeks of gestation. It has occurred early, and a single case is reported in which a uterus distended with blood to the size of a uterus at term, was found to contain a fœtus of only three months.

Symptoms.—The most prominent symptoms are shock and collapse, pain, hæmorrhage, absence or feebleness of uterine contractions, and increased tension of the uterus.

The collapse results partly from the rapid withdrawal of blood from the circulation, and partly from the stretching or rupture of uterine fibre. Women have died undelivered, and in a few moments, in this manner.

The pain has been described as of a dull and aching character. This description is altogether too mild for cases of the concealed variety. Here it is especially severe and agonizing. Patients speak of the pain as cutting them, tearing them, or breaking them in pieces. The pain is referred to the back, to the womb, or to the placental site. Every uterine contraction causes the woman to cry out, and she is constantly moaning between the contractions. Doubtless the collapse is deepened by the severity of the suffering.

The hæmorrhage is usually profuse. Clots to the weight of one and a half pounds have been found after delivery. Usually in the concealed variety, before the appearance of the blood externally, there is a trickling of serum from the vulva. This serum is derived from the contracting clot within the uterus. When the blood appears externally, it usually comes in gushes between the labor pains and ceases to flow on the occurrence of a pain. One will be struck by the profound anæmia of these patients. How much this anæmia is a cause and how much the effect of the hæmorrhage it will be difficult to say. There is usually some subcutaneous œdema, and the pulse is rapid, feeble and small. If the child be alive at the occurrence of the hæmorrhage, and if the fetal portion of the placenta be lacerated, the child will be exsanguinated when born.

The feebleness of the uterine contractions and their painful character will excite attention. These pains, feeble though they be, seem to be efficient and the os dilates very well in the majority of cases. I have been able to find but a single case where there was trouble in this respect. Expulsive pains are either entirely absent or altogether inefficient.

There is increase both in the size and tension of the uterine tumor. At the eighth month the uterus normally reaches to the epigastrium. In these cases it seems to fill the whole abdominal cavity, and although its tension is increased, there is a lack of resiliency upon pressure. This condition gives to the touch a peculiar doughy feel to the uterus which is characteristic. If the placenta be attached to the anterior uterine wall, the secondary tumor may be felt as a hemispherical swelling hard and painful.

Causation.—Accidental hæmorrhage in its causation, mechanism and effects is precisely similar to abortion. Its additional gravity is merely due to the increased size of the fœtus to be cast off and to the enlarged condition of the uterus which permits of a great accumulation of blood within its walls. We may call this accident, therefore, delayed or late abortion. Any cause of miscarriage is equally operative here. Among the predisposing causes may be especially mentioned frequent or oft-repeated child bearing, malaria, syphilis, anæmia—anything in fact that may cause degeneration of the placenta. Obstetricians are not pathologists, and so far as I have been able to find, but a single placenta has been examined microscopically in this condition. This placenta showed amyloid degeneration. This form of hæmorrhage has occurred in hæmatophilia. Albuminuria has been present in a majority of the cases and is the most common cause. The exciting causes are often very trivial. Occasionally the hæmorrhage has come on spontaneously. Usually there is a misstep, a fall, a straining at stool, a sudden muscular exertion, or a sudden violent emotion. In short, the exciting cause is just such a shock as would cause a sudden vasomotor disturbance or a sudden change in blood pressure, or a sudden contraction of the uterine muscular fibre. I believe that it is the mental effect more than the actual violence of the accident that causes the hæmorrhage.

Diagnosis.—The diagnosis has to be made between this condition and placenta previa, hysteria, colic, syncope, collapse from any cause, and rupture of the uterus. Rupture of the uterus occurs most frequently during labor when the pains are strong, and is attended by cessation of labor pains and recession of the presenting part. Syncope is known by the absence of pain in the womb and the short duration of the symptoms. In colic the pain is referred to the intestine, the

kidney or the liver, and there is no true collapse. In placenta previa there is on examination the boggy condition of the inferior zone of the uterus; the placenta may be felt through the os; and the hæmorrhage increases with the onset of a pain. Accidental hæmorrhage is one of the causes of collapse and must be borne in mind when the latter condition is present. The most frequent mistake has been in considering concealed hæmorrhage to be hysteria. A previous acquaintance with the patient is of great assistance here. The collapse of hæmorrhage is often not marked at the beginning; and hysterical women often complain very bitterly of pain. But a very short time will suffice to make matters plain. The deepening anæmia, the increasing pain, the growing restlessness, the coldness of the surface, the vomiting and thirst, and the advancing collapse, these symptoms of accidental hæmorrhage will clear the diagnosis. The rupture of a varicose vein in the vagina or in the vestibule will give rise to sudden and alarming hæmorrhage, but will hardly be long mistaken for hæmorrhage from a placental sinus.

Prognosis.—In mild cases of apparent hæmorrhage where labor comes on immediately, the prognosis is good for the mother and fair for the child. When the hæmorrhage is profuse, the child is in great danger. In the severe cases, where labor is imperfect, the prognosis is bad for both mother and child. It is bad for the child, because it is already enfeebled by the mother's dyscrasia, and hence dies when only a comparatively small portion of the placenta is detached. It is bad for the woman because of the great danger of post-partum hæmorrhage.

Treatment.—We should be constantly on our guard for this accident in women who are exhausted by repeated child bearing, or who are the subjects of albuminuria. As to the treatment of the hæmorrhage, its keynote was struck a century ago by Thomas Denman, when he said: "If the discharge (of blood) should be so great as to require some present measures for the relief of the patient, the common assistance for promoting the dilatation of the os must be given, till we can feel distinctly the membranes of the ovum which are to be ruptured. By the discharge of waters the distension of the uterus will be lessened, the size of the blood-vessels, of course, diminished and the hæmorrhage in general immediately removed or very much abated."

Digital dilatation of the os will usually be sufficient. If difficulty be encountered in the dilatation, the use of the Barnes dilator will be indicated. But suppose that we do not see the patient early, not until after a large effusion has taken place beneath the placenta and the uterus is paralyzed by over-distension. Or suppose we have not been able to make the diagnosis of concealed hæmorrhage till a number of

hours has elapsed. Shall we wait longer or shall we deliver immediately. If we wait the hæmorrhage may cease, the clot may contract and the womb may regain its tone. If we extract the child, we face the certainty of severe, possibly fatal post-partum hæmorrhage. If we wait, the hæmorrhage may not cease till the woman is dead, undelivered, or the uterus may rupture from the size of the clot. If we deliver, we may perhaps be able to check the hæmorrhage. It seems as if the middle course would be the best one to pursue—that is, to rupture the membranes and to wait for true labor pains. For in the two fatal cases mentioned above, there was after the discharge of water a distinct improvement in the pulse and some slight return of color in the face.

Concerning the treatment of the resulting post-partum hæmorrhage, it is necessary to say nothing in this connection, except that solutions of iodine have been found inefficient. Having heard iodine praised very highly as a hæmostatic, I was led to try it in the last case, and although it contracted the vagina and coagulated the effused blood, it exerted absolutely no effect upon the source of the hæmorrhage. It is hopeless in these bad cases to hope to check the bleeding by anything designed to contract the womb, for it is completely paralyzed. Nothing promises much except the iodoform tampon.

The convalescence is, of course, that of a patient suffering from an exhausting hæmorrhage and already enfeebled by the antecedent dyscrasia. The after-treatment must be directed toward both states. There is another class of cases that deserves a passing mention. In dystocia from any cause, where the waters have escaped for a long time, the placenta is frequently more or less loosened and blood escapes from the placental site. The child is sometimes destroyed in this manner. But the hæmorrhage is rather a secondary condition to the cause of the prolonged labor and requires consideration in such connection.

Recapitulation.—Accidental hæmorrhage may be either apparent or concealed. It is extremely fatal to the fœtus, and places the mother in greatest jeopardy.

Its cause is a sudden slight accident to an enfeebled anæmic or albuminuric woman. Its symptoms are collapse, great pain, feeble uterine contractions and increased uterine tension, with or without external hæmorrhage. Its treatment is, when the case is seen early, to deliver as rapidly as possible; when the case is seen late, to rupture the membranes and to wait for the advent of uterine contractions.

REPORT OF A CASE.—WAS IT HYDROPHOBIA?

By A. ROSS MATHESON, M.D.

Read before the Medical Society of the County of Kings, May 20, 1890.

Through the courtesy of Dr. J. J. Ashley, of this city, I am permitted to present the report of a case I saw in consultation with him on December 2, 1888.

Miss J. R., age seventeen years, born in the U. S., and residing in New Jersey.

* She had first menstruated when fifteen years of age, and afterwards at irregular intervals of from three to five months, and although somewhat anæmic in appearance, had always enjoyed fairly good health. On the 19th of August, 1888, while driving, a strange cat out of the yard, the animal sprang upon her and bit her arm. A physician was called, who applied some local treatment and expressed the opinion that the wound was only slight, and that no bad results would follow. The patient and the family accepted this explanation, and the incident was soon almost forgotten. In the early part of November she began to experience slight headaches, loss of appetite, malaise and prostration, which was attributed to the irregularity of her menses and also to malaria. This condition continuing, it was deemed advisable to send her to Brooklyn on a visit, where she arrived on the 24th of November. On the 25th she complained of restlessness, insomnia, and pain in the fingers and arm which had been bitten. On the 26th attended a party in the evening and danced, and while returning home got her feet wet; slept well that night. During the 27th, 28th and 29th felt better, but had shooting-pains in the arm, which she described as "feeling like electricity." On the 30th she said she had slept but little during the night, and was suffering from nausea, vomiting, and orthopnœa. The pain in the arm continued, and there were several congested lines extending from the wrist to the elbow. December 1st, was unable to eat any breakfast; complained of thirst, but refused drink for fear of vomiting. At noon she drank some tea and ate some toast, after which she started for home. When on the street she felt so badly that she went into a drug-store for something to relieve her. The druggist administered some stimulant, advised her to return to the house and to send for a physician. Dr. Ashley was called; he found her lying on the bed; she seemed hysterical and would start up with a cry; sighed frequently and heavily, respiration quick, short and labored, temperature 102°, pulse 100, unable to swallow without feeling, as she described it, "as if I should lose my breath and die."

Administered chlorodyne and morphia, which was swallowed with considerable difficulty. The doctor visited her again at midnight. She was restless, starting up from sleep in a frightened manner, and complaining of a "feeling of suffocation." There was considerable secretion of frothy mucus, which she removed from her mouth with a quick sweep of the hand, as she would not allow the use of a cloth. I saw her in consultation, about 8 o'clock A. M., on the 2d of December. Her countenance was anxious, face pale, and pupils widely dilated, and her general appearance was that of a person apprehensive of some great impending danger. She was restless and irritable, and complained of painful sensations in the head, neck, back, and of a feeling of constriction or oppression in the chest; her respiration was quick, shallow and irregular; pulse 130, feeble and intermittent. We did not take her temperature, as she objected to being disturbed. There were paroxysmal spasms of the throat, larynx and chest, occurring at intervals of about ten minutes apart, some of which lasted twenty seconds or more, and prevented respiration. She complained of thirst, but any attempt at drinking precipitated a convulsion more severe than its predecessor, and some of the fluid was ejected at these times, but notwithstanding this she succeeded in swallowing some drink and liquid nourishment.

The symptoms of reflex excitability were the most remarkable I have ever witnessed. For example, a person walking in the room or speaking with his face toward her would provoke a convulsion. This occurred several times during the visits of Dr. Ashley.

In the afternoon Dr. Landon Carter Gray saw the patient, and while speaking to her, although his face was at least four feet away from her, she exclaimed, as soon as her spasms would permit: "Doctor, please turn your face the other way, your breath is cold and it is killing me." Dr. Gray waved his hand, not violently, and yet so slight a disturbance of the atmosphere caused a spasm.

Her mental faculties were normal; there were neither delirium nor hallucinations at any time during her illness. There were several short periods of sleep during the day, which were abruptly terminated by the spasms, which continued until she died, about 7 P. M.

The treatment consisted in the use of such remedies as are usually employed in controlling or mitigating such symptoms, viz., bromides, morphia, chloroform, chloral hydrate, sulfonal, etc., and also nourishment and stimulants. These were administered by the mouth, hypodermically, by the rectum, and by inhalation.

Dr. Ashley was in attendance during the greater part of the day, and attended personally to giving the medicine and food.

An autopsy could not be obtained.

My purpose in presenting the history of this, to me, very interesting case, is to elicit the views of others regarding its character and classification.

Was it hydrophobia? Was it tetanus? or what was it?

The patient was bitten by a cat, but unfortunately the cat escaped, and its history is unknown. Assuming that the cat had rabies, we have a period of incubation of 103 days, attended by a series of prodromal symptoms recognized in hydrophobia, and succeeded by the characteristic phenomena peculiar to that disease, spasms of the muscles of the throat, larynx and chest. The spasms were clonic, unlike those of tetanus, which are invariably tonic, and affect the muscles of the back and limbs; neither was there trismus, nor opisthotonos, symptoms common to tetanus.

On the other hand, there was no delirium, hallucination, nor fear of water, aside from the dread that the act of swallowing might excite spasms. I have had many opportunities of observing tetanus, both traumatic and idiopathic, and on comparing the clinical features of this case with such observations, I am convinced that it does not come under that classification, and while it lacks some common symptoms and characteristics of hydrophobia, as defined by well-known authors, yet the principal and essential symptoms, the clonic spasms of the muscles of deglutition and respiration convince me that this case may be properly classified as hydrophobia.

In conclusion, I will state that all circumstances or reference that could possibly suggest any connection between her illness and the bite of the cat, or of hydrophobia, were religiously avoided in her presence—a course which I will recommend to all persons who may be brought in contact with cases of suspected hydrophobia.

PHYSIOLOGY IN THE SCHOOLS.

The following question and answer record what actually happened in a "destrict school" in this State within a few months, in a junior class in physiology.

Teacher.—What teeth come last?

Pupil.—False teeth.

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EDITORIAL.

THE CONTAGIOUS DISEASE HOSPITAL.

It is sincerely to be hoped that ere the present winter is fairly upon us the new contagious disease hospital at Flatbush will be ready for occupancy. That Brooklyn has been so many years behind other cities in the provision which it has made for those afflicted with contagious disease is a disgrace, which will, we trust, soon be wiped out. The want of such an institution has long been felt by the profession, and that the laity are beginning to appreciate it is shown by the fact that at the recent Commencement Exercises of the Packer Institute, an essay by one of the graduating class on "A Hospital for Contagious Diseases," was listened to with intense interest and the sentiments of the essayist heartily applauded. In speaking of the new hospital, Miss Evans, the essayist, said:

"The city has purchased five acres of land at Flatbush, where it will open in the fall a hospital for contagious diseases. It will consist of one pavilion for small-pox, another for scarlet fever, and a third for diphtheria. Careful provision is made for disinfection, and the building, when completed, will be one of the best equipped in the country. Unfortunately, it will also be one of the smallest. It accommodates at most but ninety patients. The same short-sighted policy which allowed the evils at Flatbush to continue so long, cut down the original appropriation from \$65,000 to \$45,000, and made no provision for measles, typhus or erysipelas. Even if more pavilions were built, the great need for convalescing wards and private rooms for pay

patients would not be touched. Few things can be more revolting to a person of even moderate refinement than to share a sick-room with twenty others. And a municipality has no right to force a citizen to either clear his house of boarders or send a sick man to a Flatbush hospital. The pennywise spirit of these grants is shown in the inadequate appropriation for salaries. Although scientific nursing may make a drain on the city's purse, it would be true economy to take advantage of the training that makes a genius of the born nurse and a capable caretaker of the intelligent woman."

PRELIMINARY EXAMINATIONS.

So much interest attaches to the subject of the preliminary education of medical students that we have thought it would interest the profession to see a list of the questions prepared by the Board of Regents and propounded to the would-be student of medicine. We have, therefore, in the present number published the questions submitted at the spring examination held in New York. It will be seen that these questions are confined to the subjects specifically mentioned in the law of 1889. The law of 1890 permits an examination "in their substantial equivalents approved by the regents," and in the recent regulations published by that body, a large number of studies are mentioned from which a student may make his selection. If, for instance, he has been so long out of school as to have forgotten his geography, he may substitute for it mineralogy or zoology, or botany, and a similar choice may be made from a prescribed group to take the place of the other subjects mentioned in the act.

The Regents have shown admirable judgment in the rules which they have adopted for the enforcement of the law, and from a conversation which we have had with the Secretary of the Board, Melvil Dewey, Esq., we are satisfied that everything will be done by that board to make the law beneficent and not oppressive.

THE MATTISON METHOD.

Dr. J. B. Mattison, of this city, is certainly entitled to have his name associated with the method which he has devised and perfected for the treatment of the opium habit. This method is distinct from either that of Erlenmeyer or of Levinstein, and is as original as either. In an exhaustive paper on "The Treatment of the Morphine Disease," contributed by the doctor to the September number of the *Therapeutic Gazette*, the details of his method are fully described. Those who are interested can obtain reprints on application to the author.

THE OPEN HORSE-CAR NUISANCE.

The long-suffering public is again to be subjected to the semi-annual outrage inflicted on it by the street-car companies. In the spring and autumn of each year the strong and the weak, the old and the young, all in fact whose duties require them to use street-cars, are compelled to run the risk of contracting bronchitis or pneumonia, without apparently any good reason therefor. Whether this treatment of the public is actuated by the sentiment attributed to the late W. H. Vanderbilt, or whether it is because railroad officials are so pachydermatous as not to know when the wind is from the east, or the thermometer in the fifties, we do not know. Certain it is that their attention has been repeatedly called to this nuisance through the press; that it is continued is a sad reflection on their regard for the welfare of the public.

PROGRESSIVE PHARMACY.

As John was leaving for business one morning, his wife said: "John, the doctor says I must take a dose of castor-oil; I wish you would stop at the drug store on your way home and get me a dose. I don't know exactly what the dose is, but I suppose two or three tablespoonfuls. And ask the druggist if he can't put it up so that it can't be tasted." On his way from business John stopped at the drug store, and when his turn came, asked the clerk if he could put up castor-oil so that it could not be tasted. The clerk said he could. "Well," said John, "put me up a dose, three or four tablespoonfuls." The clerk said that was a pretty large dose, but John said it was all right, that was what his wife said, and she knew all about it. The clerk disappeared behind the prescription desk, and presently returned with a bottle wrapped in white paper, which he placed on the counter. John asked how much it was; the clerk said twenty-five cents; John handed him a fifty-cent piece, which he took and, as John thought, went to make change. In a moment the clerk called John and asked him if he would not like a glass of soda-water. "It is so hot," said John, "that I don't care if I do." Very courteous clerk, thought John. After drinking the soda, John took up the bottle and started to go. "I beg pardon," said the clerk, "but that is this lady's prescription." "Where is the castor-oil?" said John. "Why," said the clerk, "you took that in the soda-water. I said that I could fix it so that you would not taste it." "Thunder and Mars! that was for my wife." Exit John with both hands under his vest.

PROGRESS IN MEDICINE.

SURGERY.

BY GEO. RYERSON FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

THE TREATMENT OF SUPPURATING CAVITIES WITH RIGID WALLS.

Kuester, Berlin (*Centralblatt f. Chirurgie*, 1890, No. 29). K. calls attention to the error committed by surgeons in the treatment of abscess cavities with rigid walls, in delaying opening of the same, and in frequent irrigations of the same after opening. He insists upon the following: 1. The earliest possible incision. 2. The incision must be made at the most dependent point. 3. In case of large cavities, a counter-opening is to be established. Repeated irrigation of the abscess-cavity is to be avoided as far as possible. He dwells particularly upon the subject of empyema, and describes his method of dealing surgically with this condition as follows:

After exploratory puncture, an incision is made at the lowest point of the dull percussion note, usually in the fourth or fifth intercostal space, giving exit to the accumulated pus. A probe is then passed through the wound to the posterior boundaries of the cavity and pressed firmly between the ribs posteriorly until its point is felt in an intercostal space, at which point a portion of the superadjacent rib is resected. The opening thus made must be sufficiently large to enable the surgeon to obtain a view of the interior of the cavity. Should the lowermost portion of the cavity not have been reached by the first resection, a portion is removed from the subadjacent rib, until the junction of the diaphragm and inferior reflection of the pleura is reached. The cavity then, under slight pressure, irrigated with a warm solution of salicylic acid, and the walls of the cavity carefully sponged of all traces of fibrinous matter, by means of a sponge in a handle, and through and through drainage established by drawing a tube from one opening to the other, and securing it. The wounds upon the anterior and posterior chest wall are covered by iodoform gauze, upon which is laid a cushion of moss, which may remain undisturbed for upwards of eight days. If, in case of a recent empyema, the lung begins to expand in the course of ten days, the through and through drain is substituted by a short tube through the posterior wound. The author anticipates that complete cure will follow this treatment, in recent cases, in from three to six weeks.

The author further treats of the treatment of cavities, which, unlike the pleural, are surrounded upon all sides by rigid and unyielding walls; as for instance, empyema of the antrum of Highmore. Of the three methods usually employed for gaining access to diseased conditions of the antrum, K. chooses that which perforates its wall from the face, for the reason that the indications considered by him most important of fulfilment can but be followed out by this router (thorough cleansing of the walls, and the identification by the fingers of the different portions of the cavity). This is done subperiostically, and the cavity is irrigated but once with an antiseptic fluid, and then tamponed with iodoform gauze. As soon as the suppuration becomes but slight (which sometimes occurs in a very short time), the iodoform gauze is removed and a small drainage tube substituted therefor. In empyema of the frontal sinuses, K. drains through the nose. Diseased conditions of the mastoid cells and of the cavity of the tympanum belong to this division of the subject; their treatment, however, is somewhat complicated, as compared to the others; the preservation of the hearing, as well as the prevention of brain complications entering into the question. The same principles, namely, early and free opening, however, should be followed.

DELTOID NEURALGIA.

Golding Bird (*Guy's Hosp. Reports*, 1889, vol. xlv.). The author applies this somewhat ill-chosen name to designate those rather frequently-observed cases of intense pain at the point of insertion of the deltoid muscle, and which, during the attempts to move the arm, in passing the horizontal position while being elevated simulates a paralysis of this muscle. The cause of this is always found to reside in a traumatism, and frequently this is found upon inquiry to be of so slight a character as to have been considered quite unimportant. In the first few weeks the patient favors the arm by restricting its movements, or supports in a fixed position. The restriction of the movements does not depend upon changes of the joint, as would appear, but from decreased tone of the surrounding structures. Examination shows swelling of the entire muscle, varying from slight thickening to decided swelling simulating fluctuation. This is explained by the presence of unusually loose connective tissue filled with wide lymph spaces between muscle and bone. This connective tissue becomes filled with extravasated lymph and blood resulting from the injury and the subsequent inactivity assumes a condition of chronic engorgement. The effect of this latter, and occasional retractions of the muscle, is to produce irritation of the terminal distribution of the circumflex nerve, upon attempts to perform movements of the arm. It likewise appears

that the disease may have its origin in a rheumatic diathesis, without the aid of an injury as a causative agency.

The treatment recommended is that of passive movements with the scapula fixed, massage, and possibly blistering. To this may be added faradisation, as strongly recommended by Kulenkampf, of Bremen (Centralblatt f. Chirurgie, No. 32, 1890, p. 607.

THE TREATMENT OF GENU VALGUM.

Casse (Bull. de l'acad. roy. de méd. de Belg., 1890, Hft. 1). The author claims that genu valgum in the great majority of cases is of rachitic origin, particularly when it occurs during the period of growth of the individual. The rachitic cases may be divided into three periods, for considerations relating to the treatment:

1) *That of softening, the bone possessing a more than ordinary flexibility.*—In this period much can be accomplished in a prophylactic way by supporting apparatus, sparing the child, compelling it to maintain the recumbent position; and finally, by means of a general régime directed to the rachitis, fresh air, healthy surroundings, preparations of lime, etc., particularly the phosphorus combination of the latter. If in this period the deformity has already become pronounced, the latter will undergo spontaneous improvement from simply keeping the child in bed; as, however, the bones are soft and easily bent, straightening may be accomplished and maintained by means of a fixation apparatus.

2) *The period of rehardening (réfection).*—The bones become again hard and easily broken. This is the period during which forcible redressment and osteoclastis may be performed with advantage. The author prefers the osteoclast of Robin, and has used it frequently with good result. He breaks the femur above the condyles from behind forward, and not laterally, and finds the former method much easier of performance; the larger vessels are not endangered, and no splintering of the bones occurring. He then restores the limb to its proper shape, applies a plaster-of-Paris bandage and suspends the leg from the ceiling by strongly flexing the hip-joint at a right angle, in order to avoid the soiling of the bandages.

3) *The period of eburation.*—Here osteotomy is indicated. As a rule, by the time this period is reached the patient attains adult life.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

TREATMENT OF POST-PARTUM HÆMORRHAGE BY TAMPONNING THE UTERUS.

Schouman (*Arch. d'obstet. et de gyn.*, Mai, 1890). This paper is based on results obtained in Prof Treub's clinic with the method of Dührssen. In hæmorrhage from atony of the uterus as well as from tears the uterine tampon with iodoform gauze has proved of invaluable service. No accidents have been observed from resorption and only in a few cases has there been any increase in the frequency of the pulse. An attempt made to replace iodoform with carbolized gauze had to be abandoned because the woman began to have fever. The author thinks the tamponade is less painful, more easily executed, and more effectual than any other procedure for the control of hæmorrhage in atony of the uterus. The method is not dangerous when practised with aseptic care. Thus far iodoform gauze is the only material suitable for the purpose.

MISCARRIAGE, WHY MORE DANGEROUS THAN NATURAL LABOR.

Goodell (*Arch. Gyn. Obstet. and Pæd.*, June, 1890) answers this question as follows: Because the fact of a miscarriage implies something abnormal; because owing to the attachment of the chorial villi over the whole surface of the uterus which obtains in the very early months, portions of the membranes are liable to be retained and give rise to hæmorrhage and sepsis; because the cervix not being effaced the small canal is liable to close on the retained fragment. Retention is far more likely to occur in criminal abortion since the gestation is abruptly interfered with before any detachment has taken place.

MECHANICAL STUDY OF THE FORCEPS.

Hubert (*Arch. d'obstet. et de gyn.*, Mai, 1890). The author condemns the classical forceps as dangerous to the child and the mother. In proof of his claim he cites experiments upon artificial heads filled with water. The amount of water lost under the pressure showed how great is the possible compression and how much the nerve centers may suffer thereby. Furthermore his experiments showed that the compressing action of forceps tended to lengthen the long diameter but little and expended itself mainly in elongating the transverse. The diameters which take the pressure of the blades are those which do not need to be reduced and moreover are irreducible. The biparietal diameter, as appears from the forceps marks on the head after birth, escapes pressure. Between parallel blades the cranial ovoid may be

elongated, but blades of perfect parallelism are difficult to place and retain in position. The author has been led to seek something better than the existing instruments. The new forceps of Chassagny present the following peculiarities of construction.

1. The arms do not cross but each articulates with the extremity of a cross bar longer than the diameters of the head.

2. As a result of this construction the pressures developed on bringing together the blades are oblique from above downward.

3. When the blades are approximated or separated the size of the ellipse is modified but its shape is not sensibly changed.

4. A lesser degree of cranial curvature is possible than in the classical forceps.

5. Greater flexibility is permitted.

6. The tips of the blades first come in contact with the cranial ovoid, but no harm comes of this owing to the great flexibility of the blades.

7. The locking is easy even though the blades have penetrated to unequal depths or are not absolutely parallel, are not placed entirely facing each other or are unequally bent under pressure.

8. The cranial grasp is long enough to permit elongation of the cranial ovoid longitudinally.

Experiments upon the artificial head demonstrated the marked advantage of the new over the crossed forceps. The injurious pressure upon the foetal head was greatly diminished; moreover the maternal traumatism was much less with the new than with the old instrument. Clinical experience fully substantiates these claims.

The author has devised a modification of the Chassagny forceps which he describes as follows: They are S shaped, about parallel and the shanks approach each other under the head less than do those of C.'s forceps, giving greater freedom for the elongation of the long diameter of the cranial ovoid. The cross bar is broken by a hinge, making it possible to vary the inclination of the blades. The natural mechanism of the head is not impeded.

ARTIFICIAL INVERSION OF THE UTERUS IN POST-PARTUM HÆMORRHAGE AND THE INTRA-UTERINE SUTURE OF THE UTERUS IN CÆSAREAN SECTION.

J. Kochs (Centralbl. f. Gyn., No. 20, 1890). The author refers to Saenger's endorsement of Lomer's proposition to amputate the uterus in atonic post-partum hæmorrhage. He thinks so formidable a procedure requiring time and assistance could hardly be accomplished in season to be of material service. He therefore proposes inversion and the application of hæmostatic measures to the inverted organ reserving amputation as a last resort.

The inversion of the uterus facilitates the use of the various measures for the control of hæmorrhage. The nerve irritation necessarily incident to the operation of inversion helps the uterine contractions. Styptics may be readily applied to the bleeding surfaces, and the hæmorrhage is completely under control by the use of an Esmarch's tube or other means of constriction.

He reports a case in which the uterus became inverted after labor by traction upon the cord at the hands of a midwife. Immediate reposition proved impossible. The bleeding was controlled by binding the uterine tumor with muslin strips. Six hours later, when the patient had rallied, reinversion was accomplished. K. also proposes tying sutures on the mucous surface of the uterus in Cæsarean section. For this purpose the uterus may be artificially inverted or if that prove impracticable the suture may be applied from the cavity of the uninverted organ.

This method he thinks would afford a greater protection than the usual suture against peritoneal sep is and against adhesions as well.

INTRA-LIGAMENTOUS PREGNANCY.

Rein (*Annals Gyn. and Pæd.*, Vol. III., No. 10) reports a case of pregnancy of the left tube in a V para rupturing into the broad ligament early in the second month. The patient was delivered by laparotomy at term. The placenta and membranes were removed by enucleation. Mother and child survived.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M.D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

ALCOHOLIC NEURITIS.

Buzzard (*British Med. Jour.*) gives a short description of the above disease, or, as he terms it, polyneuritis, a form of multiple neuritis or alcoholic paralysis, due to the effects of alcohol upon the nervous system. This form of nervous lesion is more common in females than males, and may come at a comparatively early period of life, the author recording one case in which the patient's age is noted as twenty-two years.

The nerves principally affected are the radial, anterior tibial, or the perineal. The degeneration found in these is of a parenchymatous character. The muscles are affected by changes in nutrition.

The various manifestations are characterized by affections of both motion and sensation. It is difficult or impossible to stand. The

motions of the knee-joint are impaired. The feet are "dropped," being in a condition of over-extension. Their motion is not wholly lost. This position of the feet is very frequently found, and is considered as quite characteristic of the disease.

The knee-jerk is absent. There is atrophy of the muscles of the leg, most marked in the anterior ones. The same condition is noticed in the muscles of the arm and forearm, being associated with the wrist-drop. In almost every case a feebleness in the grasp will be found. Electric response is diminished or may be absent.

Painful sensations are complained of, being most common in the lower extremities. Tenderness at certain points may be elicited, and various degrees of anæsthesia are often present.

Loss of memory and forms of hallucination characterize the mental disturbance. Suppression of the catamenia is generally noted, although the functions of both bladder and rectum are normal. Paralysis of other muscles, in certain exceptional cases, has been observed. Those affected have been the muscles of respiration, of deglutition, and of the eyeball. In cases where there has been great vaso-motor disturbance, œdema has been found; the cuticle sometimes scales off. The author states that lesion of the vagus may lead to pneumonia.

In the majority of cases the severity of the lesion comes upon the lower extremities.

[NOTE.—It has been our privilege to observe, in hospital work, quite recently, a number of cases of alcoholic neuritis. It may be stated that this is one of the few nervous diseases that has distinct and individual characteristics. It is sometimes difficult to arrange and classify nervous diseases, for certain symptoms and signs of one lesion may correspond with those of another, especially in cases where the anatomical change is in the spinal cord. But the external manifestations of alcoholic neuritis are few in number, and there is a marked similarity in the cases. The conditions are essentially chronic. Improvement to a very great degree may take place. Often, however, no change for the better is observed. Death may take place from lack of nutrition, or, as in one case under our own care, from pulmonary tuberculosis. Neither the interrupted nor the continuous currents have proved beneficial in our hands. Of drugs, arsenic, the iodides, the mercurials have been used. The best of food, with an abundance of fatty material, is required in all cases.—H. C.]

PREVENTIVE MEDICINE.

BY E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

LEGISLATION FOR THE PREVENTION OF BLINDNESS.

The following law, passed by the last Legislature of the State of New York, went into effect on the 1st of September, 1890.

SECTION 1.—Should any midwife or nurse, having charge of an infant in this State, notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse, so having charge of such infant, to report the fact in writing, within six hours, to the health officer or some legally qualified practitioner of medicine of the city, town, or district in which the parents of the infant reside.

SEC. 2.—Any failure to comply with the provisions of this act shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

SEC. 3.—This act shall take effect on the 1st day of September, 1890.

The manifest intent of this act is to prevent the neglect and possible permanent injury of the eyes of infants from ophthalmia neonatorum. That there is need of some improvement in existing methods in this respect, is shown by the fact, given by good authority, that nearly one-fifth of all the cases of blindness in the various asylums of the State are the result of this disease. Whether this legislation will do what is intended remains to be seen. It may be pertinent to inquire who is to inform midwives, and the "handy neighbor" of the requirements of this law. As the law merely requires the report of the case to the health officer of the town, and does not make it a part of his duty to see that the eyes are properly treated, this can hardly be expected to work much relief of existing conditions. On the other hand, if the conditions of the law as to reporting the case to a physician be complied with, this can hardly be expected to cure or even treat the ophthalmia. It is not to be expected that this or any other act will compel people to employ a physician to treat a disease which the average nurse thinks she can treat as well as the physician.

SANITARY NOTES AND COMMENTS.

The Rhode Island State Board of Health gives the following method of disinfecting rooms by ozone, which is admitted to be a powerful deodorizer and disinfectant: Make a mixture of equal parts of manganese dioxide, potassium permanganate and oxalic acid. This mixture, moistened with water, evolves ozone instantaneously. For a

room of ordinary size, take two tablespoonfuls of this powder, place on a plate and moisten from time to time, when ozone is given off in considerable quantities, but not sufficient to excite coughing. It is stated that the disengagement of ozone can in part be substituted for the changing of the air, in close apartments.

Dr. C. M. Cresson, chemist to the Board of Health, of Philadelphia, is authority for the statement that he has frequently found the typhoid bacillus in the juices of the celery plant that had been grown on land that was fertilized by night-soil. If this be true, it is another argument in favor of the thorough disinfection of typhoid stools.

The California State Board of Health have asked the judges of that State, before sentencing a criminal to State Prison, to have the county physician make an examination of his physical condition. If he is consumptive, he is to be sent to a special prison. This isolation of consumptive prisoners is a desirable improvement. A fifteen years' sentence to a prison is almost certain to end in death by consumption. How often are prison cells thoroughly disinfected? One-half the deaths in State Prisons are said to be due to phthisis! Is it not time to apply preventive measures?

Dr. Robert Koch, in the course of a paper read before the International Congress (Br. Med. Journal, August, 1890), stated that he had succeeded in conferring upon guinea pigs, which are known to be peculiarly susceptible to tuberculosis, perfect immunity against this disease. He had also been able to arrest the development of the bacilli after they had been implanted in the tissues by inoculation. He expressed the belief that we were on the eve of a new era in bacteriological research. Indeed, if he shall succeed in preventing and combating and arresting tuberculosis in man, as he claims to have done in guinea pigs, he will have done enough for one lifetime.

The English Government has appointed a Royal Commission on Tuberculosis, consisting of Lord Basing, Drs. Geo. Buchanan, Payne, Burdon Sanderson and Brown, with instructions "to inquire into and report what is the effect, if any, of food derived from tuberculous animals on human health; and if prejudicial, what are the circumstances and conditions with regard to the tuberculosis in the animal which produce that effect upon man."

The commission has authority to conduct experiments, summon witnesses, and visit herds of cattle where information may be had. It is to be hoped that they may succeed in adding something definite to our knowledge of this very important matter.

The last Legislature of this State passed a law, which is now in effect, and which makes it a misdemeanor punishable by a fine, for any minor, "actually or apparently under sixteen years of age," to smoke or use tobacco in any form in any street or place of public resort.

The Board of Aldermen of the city of New York have passed resolutions asking the Police Commissioners to "see that the police are instructed to enforce the law by arresting such minors as they find using cigarettes or tobacco in any form upon the public streets, or on or in any public place." Verily, the way of the young smokers is to be hard. By a recent resolution of the Board of Education of Brooklyn, it is proposed to have the law read in the schools once a month, so that no schoolboy shall be uninformed as to his responsibilities in the matter.

The *American Analyst* of August 14th quotes the following words of Dr. Holmes, of Rome, Ga., who says: "Smoking is not such an injurious and dangerous habit as has been claimed. A person who smokes uses one of the best germicides and antiseptics. During the war I was in charge of over five thousand soldiers at the post in Florida. There were marshes near by, and the dysentery broke out among the troops, raging with great virulence. I noticed that all the Irishmen who went about with clay pipes in their mouths did not contract the disease. I smoked all the time, and was free from it. . . . So that smoking, instead of being objectionable, is in reality a good protective against disease. There is at least food for thought in its utility as a prophylactic against disease." (See BROOKLYN MEDICAL JOURNAL, July, 1890, p. 478.)

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital; Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

MORPHOLOGICAL AND BIOLOGICAL DIFFERENCES BETWEEN THE PARASITIC ORGANISMS OF MALARIA TERTIANA AND QUARTANA.

Camillo Golgi (Arch. per le scienze med., Vol. XIII., No. 7). According to G.'s observations, malaria tertiana and quartana are induced by two parasites biologically and morphologically different.

The biological differences are as follows:

The parasite of the tertiana completes its development in two days, that of the quartana in three days.

The amœba of the tertiana are more motile than those of the quartana.

In the red blood corpuscles the parasites of the tertiana destroy the hæmoglobin much faster than those of the quartana.

The red blood corpuscles in the quartana often appear collapsed, in the tertiana swollen and round.

Morphologically the two parasites differ in the following particulars :

In the first stage of development the tertiary parasites present a less fine protoplasm, and hence a sharper contour than those of the quartana.

The pigment granules and rods are coarser in the quartana than in the tertiana.

Finally, the segmentation of the two amœba forms is different; that of the tertiary occurs in less regular order than that of the quartana.

ÆTIOLOGY OF ANEURISM OF THE PARS MEMBRANA SEPTI VENTRICULOSUM CORDIS, AND ITS RUPTURE.

G. Klein (Virchow's Archiv., Bd. cxviii., p. 57). The case reported is that of a housewife with previous history of syphilis. She had had two births and one abortion. The heart-disease was of four months' standing. Auscultation gave indefinite symptoms which did not admit of a positive diagnosis. The necropsy findings revealed an aneurism of the pars membrana half the size of a walnut, with rupture into the left ventricle. From the nature of the findings K. thinks arterial sclerosis and atheroma are of ætiological weight in the occurrence of the aneurism.

A CASE OF PROBABLE AUTO-INOCULATION WITH A STAPHYLOCOCCUS FROM A HYPODERMIC SYRINGE—DEATH.

(Hoagland Laboratory, Dept. Histology and Pathology, 1890.)

Mrs. B., æt. forty, had for some years been a semi-invalid; had suffered more or less with pelvic disturbance, which caused much pain, and had induced the opium habit, the drug being used in the form of self-administered hypodermics of morphia. For four years this habit was practised.

During the recent epidemic of la Grippe she fell prey to the distemper and was seriously ill with typical symptoms. From this attack she was slowly recovering, when the following symptoms made their appearance. Severe abdominal pain, nausea and vomiting, with more or less marked prostration. The pains finally extended over the entire body. Vomiting persistent, some purging, urine scant and high color, contains considerable albumen. Patient apparently greatly exhausted.

Pupils normal, respond to light. Vomiting persists in spite of all effort to control it. Urine more scant and higher color. Slight twitchings are now noticed in the left arm, the fingers of left hand somewhat flexed. All symptoms are progressively more marked, clonic spasms of left arm increase in frequency and severity. The entire body is finally thrown into clonic spasms much resembling the convulsions of uræmia. Urine almost suppressed, very high color, contains blood and considerable albumen. Slight œdema of extremities. Death a few days after invasion in coma and convulsions.

Necropsy.—Inspection. Body somewhat emaciated, rigor mortis not marked, slight œdema of lower extremities. Thoracic and abdominal walls contain much fat, their muscular substance is very pale and much atrophied. Over each deltoid region there is an oval area of indurated skin, dark in color, very firm and thick. That on the left side is suppurating, and pus is here forming under the cutis vera. Both areas are about two inches in their long diameters.

Diaphragm: Left fifth rib, right fifth interspace.

Peritonæum appears normal.

Thorax: No fluid in either pleural cavity. Old adhesions at apex of left lung. Both lungs are retracted.

Heart: Pericardium contains a great deal of fat. Heart a trifle small, flabby, soft in consistence. Its cavities contain a considerable quantity of fluid blood dark in color, also straw-colored post-mortem clots. All its valves normal and competent. All its cavities show eccentric dilatation. Myocardium thin, pale brown and intensely anæmic. Coronary vessels very tortuous, are surrounded by enormous quantities of fat.

Lungs appear normal, excepting that the upper lobes are intensely anæmic and the lower lobes congested and œdematous.

Abdomen: Diaphragm very thin, translucent, its musculature markedly atrophic.

Spleen six or eight times its normal size, very soft and flabby, pale in color. On gross section, cut surface pale red, smooth. Mesentery contains much fat, as do also the great omentum and mesocolon.

Kidneys: Left elongated and somewhat lobulated, soft in consistence, capsule not adherent, surface smooth and studded with countless small punctiform hæmorrhages, otherwise pale and anæmic. On gross section the cut surface is dull, cortex a trifle swollen, markings indistinct. Around the malpighian corpuscles are numberless hæmorrhages, otherwise cortex very pale. Right kidney smaller than but otherwise resembles the left.

Stomach very thin, round in size, mucosa thin, pale, dull, and everywhere studded with punctiform hæmorrhages. Intestines very

thin. The entire muscularis of the alimentary canal is markedly atrophic. Liver small, anæmic, contains much fat and slightly increased stroma. Ovaries both cirrhotic.

Microscopic Findings (fresh double-knife sections).—Heart: Myocardial fibres atrophied, contain much perinuclear pigment and many small fat granules. Their trans-striæ are everywhere indistinct, and in spots obliterated. Between the atrophic fibres in many spots is seen adipose tissue and in others hyperplastic connective tissue.

Kidneys: Most of the glomeruli are hæmorrhagic, extravassated blood being seen around the malphigian tufts, within Bowman's capsules. Cortex and medulla both markedly congested. Some of Bowman's capsules are thickened, and the parenchyma of the cortex is everywhere swollen and cloudy, many cells containing fat in granules. Stroma in some locations thickened. The epithelial cells are in many tubules desquamated. Many tubules contain hyaline, epithelial and granular casts, while others contain much granular detritus.

Liver: Slightly cirrhotic. The hepatic cells are either cloudy granular and swollen, or atrophic, containing golden pigment, or show fatty degeneration.

Alcohol hardened celloidin sections of the heart, kidneys, and liver are found to contain in their blood-vessels, quite generally, zoöglea masses of staphylococci which completely plug the smaller vessels in spots. These cocci are rather large, appear uniform, and take a very beautiful Gram stain easily. In the kidneys are seen foci of small abscesses located in the glomeruli principally. In other spots are hæmorrhages in which are micrococci.

(Here is evidently a case of microbic infection. Here the interest of the case centres; and the prime question is, as to the source of the infection. The microörganism is a coccus forming zoöglea masses resembling much the staphylococcus pyogenus aureus, with a tendency to the formation of abscess. Now examination of the left deltoid region reveals, as above, an area of suppurating tissue, giving ample opportunity for inoculation with a hypodermic needle.

The clinical symptoms are peculiar. The vomiting, purging, gastro-enteric pains, together with the fever and progressive clonic spasms, all coincide with the idea of microbic infection, and the plugging of the blood-vessels as described.

I believe this patient, while administering to herself morphia, drove the hypodermic needle through the pus in the left deltoid region, thus carrying the staphylococci into the deep tissues, and causing general infection, which was too much for a constitution already greatly enfeebled by wide-spread parenchymatous and interstitial changes.

The practical interest in the case lies in the possibility of dangerous,

even deadly, infection from the careless use of improperly sterilized needles. It has already been shown that certain remedies, as tincture of musk, may contain such organisms as the bacillus malignis œdematis, and that patients have died from its exhibition hypodermically. Such occurrences are warnings, and call for the utmost caution in the use of hypodermic medication, that both fluids and needles should be sterilized, and the patient's own integument thoroughly aseptic.—V. C.)

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M. D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital.

SUGGESTION AS TO THE FUNCTION OF SOME OF THE RETINAL ELEMENTS.

Uniformity of opinion has by no means been reached in the views as to the end organs of the optic nerve in the retina, and therefore a suggestion by Berry (*Oph. Review*, May, 1890, p. 134) as to the functions of the light percipient retinal elements has considerable interest. While ascribing to the retinal pigment light perception without regard to form, he credits the retinal cones with the perception of form (and color?). The histological structure and arrangement of the rods and the greater number of nerve fibres running to the papillo-macular area of the retina, render it probable that the rods have some subordinate function as end organs, and Berry advances the supposition that they may have to do with the projection of the image and with movements of the eye started in the interest of fixation. This is of course hypothesis only, but while not capable of direct proof, is not contrary to what we already know on the subject.

ANILINE COLORS AS ANTISEPTICS.

All will admit that the ideal antiseptic has yet to be found; one that is not poisonous to the human organism and that is diffusible enough to penetrate even to the centre of bacterial colonies, as well as through the mucous envelope surrounding the micro-organisms.

Stilling (*Revue Générale d'Ophtal.*, April, 1890) has experimented with aniline colors as antiseptics and publishes his results in a paper which strongly upholds their merits in this respect. He says that certain of the aniline colors (notably violet) possess all the qualities which one can demand of a good antiseptic, not only preventing infection, but also arresting an established suppuration. It is a fact known to all botanists that bacteria, bacilli or cocci of every sort die when an aniline color penetrates by diffusion their mucous envelope and colors their protoplasm.

His experiments may be arranged in three groups :

- I. Botanical and bacteriological.
- II. Upon animals.
- III. Therapeutic.

I. Methyl violet (and by this he refers to the entire group of aniline substances giving a violet color) proved most efficacious in arresting the development of bacteria. In a strength of 1-500 or 1-1000 it prevented the formation of fungus upon moistened bread, fungi and the bacteria of putrefaction being much more resistant to antiseptics than the ordinary pathogenic bacteria which require definite conditions for their development, and are therefore less valuable as tests. The development of mycelium in sweetened beef gelatine was arrested by strong solutions of methyl violet. Without enumerating his experiments in detail, suffice it to say that solutions of the strength of 1-3000 absolutely prevented any development of mycelium in sweetened beef extract, even when the latter was artificially infected and exposed to the air. Putrefaction did not occur in solutions of 1-2000 even after prolonged exposure at a favorable temperature, and it was therefore assumed that weaker solutions would suffice for the less resistant pyogenic cocci. This was found to be the case, cultures of *staphylococcus pyogenes aureus*, etc., being deeply colored and showing no further growth when sprinkled with methyl violet (1-64000). Other aniline colors, as fuchsin, methyl blue, vesuvin, rhodamin, etc., proved less effective. Fermentation was also notably checked by solutions of 1-1000 and arrested by stronger.

II. When instilled into rabbits eyes a solution of 1-1000 caused intense coloration of conjunctiva and sclera, and also to a less degree of the iris, the cornea remaining clear as long as the epithelium was intact. Twenty-four hours sufficed for the color to entirely disappear. Methyl violet introduced in substance into the conjunctival sac produced considerable general coloration and the precipitation upon conjunctiva and cornea of a substance having a metallic lustre. Subsequently the epithelium became detached in large scales which showed under the microscope a surprising fatty degeneration, almost similar to that from phosphorus. At the same time the scales like the entire conjunctival sac were free from bacteria. Other mucous membranes were similarly affected. In many cases there was produced in the human eye a dilatation of the pupil without weakening of the accommodation. Subcutaneously large quantities (20 cubic centimeters or more of 1-1000 solution) were borne without harm by rabbits and guinea-pigs, unless injected into the peritoneal cavity. Here over 10 c. c. produced disturbance, and if in large quantity, death. At the autopsy the abdominal contents, intestine, liver and kidney were col-

ored intensely blue, the blood, however, being normal; and microscopical examination showed that even in organs deeply colored the vessels remain intact. This curious effect gives rise to a very beautiful appearance in the kidney, where the deep blue cortical canaliculi present a marked contrast to the glomeruli with their tufts of red blood-vessels. It is true that one sees in the living human eye that the aniline penetrates the vessels, but it is evidently rapidly disposed of without producing any alteration in the blood itself. Death probably ensues from coloration of important nerve centres and consequent paralysis. Autopsy shows no trace of serous exudation or inflammation, the abdominal cavity being rather dry. Methyl violet could be habitually eaten by rabbits in their food in large quantities, in grammes even, without harm, the fæces being intensely blue. Animals killed under such circumstances showed on the following day moderate coloration of the intestinal tract. Considerable quantities may be injected into the lungs of rabbits without causing trouble. As, however, many of the aniline substances contain arsenic, care must be exercised that the preparations employed are pure.

III. Stilling has used with success solutions of methyl violet in numerous corneal ulcerations with or without hypopyon, even when careful treatment with the accepted remedies had failed, and states his belief that it will soon replace the galvano-cautery in the treatment of corneal ulcers. He has also obtained good results in conjunctival and lid inflammations. But it is not alone the external inflammations of the eye which are amenable to treatment with aniline. Parenchymatous keratitis and serous iritis, even those severe forms of long duration with marked scleral inxection and diffuse vitreous opacities, were rapidly and markedly benefitted. Even in certain cases of disseminated choroiditis, its use has been followed in a few days by an astonishing and permanent improvement of visual acuity. The action of the aniline is explainable by its ready diffusibility, it traversing the sclera to the choroid as readily as it does the cornea to the iris. It was also of service in a pronounced case of sympathetic ophthalmia which had resisted atropine and mercurialization, instillations of methyl violet (1-1000) producing a prompt and continuous improvement. Injections into the vitreous did no harm and clearly arrested in rabbits panophthalmitis artificially excited by inoculation. Trials in the domain of general surgery showed the efficacy of aniline against all forms of suppuration, provided the remedy was allowed to penetrate thoroughly; and Stilling therefore recommends the aniline colors as perfectly appropriate antiseptics in surgery, obstetrics and gynæcology.

In operations, solutions of 1-1000 may be used for the instruments, 1-2000 or weaker for the wound. Sutures should be impregnated

with 1-1000, and gauze or cotton likewise impregnated may be used as dressings. When suppuration exists the technique has to be modified to suit the case, use being made of injections, crayons or powder, or strong solutions painted on the part. A slight inconvenience attending the use of methyl violet is the consequent staining of hands and fingers, which, however, can be immediately removed by the use of alcohol or Labarraque's solution. On the other hand, the staining shows the extent of the sterilized area. Other uses of the antiseptic will suggest themselves, but it is in every case necessary to examine and carefully select the material employed. There are many kinds of methyl violet differing in composition and effect. Many among them, as above stated, contain arsenic or phenol, and can produce marked irritation, while pure methyl violet causes at the most but slight irritation when applied to mucous surfaces in substance or concentrated solution. Merck, of Darmstadt, has, at Stilling's suggestion, introduced, under the name of pyoctanine, suitable methyl violet for antiseptic use.

GYNÆCOLOGY.

BY WALTER B. CHASE, M.D.

TREATMENT OF UTERINE FIBROMATA.

The "Gazette de Gynécologie," May 1, 1890, contains an essay by Dr. Geo. Gautier, submitted to the Academy of Medicine, Paris. For seven years he has used Apostoli's method of intra-uterine treatment by chemical galvano-caustics. In 67 patients with uterine fibromata he applied galvanism 1,329 times. In this number were four cases of malignant disease. The earliest evidence of improvement are noticed, the abatement of pain, and diminution of hæmorrhage. He states Apostoli's method has been used 20,000 times in more than 2,000 patients, in Europe and America, confirming the claims made for its efficacy.

RUPTURE OF THE VAGINA FROM COITUS.

In "Centralblatt f. Gynaekologie," No. 22, 1890, Dr. Himmelfarb, of Odessa, discusses the question of rupture of the vagina. After a careful search of the literature and his own experience, he concludes that, while labor is its most frequent cause, the remainder of cases is less frequently due to introduction of foreign bodies than violent coitus.

Rupture of the vagina in old subjects during connection is well recognized. Frank and Zeiss have recorded and H. relates another where, in a healthy woman, aged twenty-four, parametritis, peritonitis,

and fatal pyæmia followed coitus, in which the posterior vaginal wall was torn through.

Frank, of Hague, reported two cases to the German Medical Association last autumn: One a patient thirty-two years old; she recovered. In the second case there was vagina duplex; the right half ended in a blind sac, the left extended to the uterus; the hymen on the right side and the septum were lacerated.

INFECTIOUS ENDO-METRITIS.

Currier ("Transactions of the Medical Society of the State of New York," 1890, p. 191, on the "Rational Limitation of Uterine Therapeutics") says of the treatment of the infectious variety, particularly gonorrhœal, the indications are for the use of a germicide, and that the nitrate of silver (a solution 3 j to 3 j) is most satisfactory.

TREATMENT OF CYSTITIS IN WOMEN.

The "Medical Press and Circular," July 2, 1890, contains a paper by Dr. Thos. M. Madden. After mentioning his remarkable success in its management, its ætiology, and the treatment, which first should consist as far as possible in the removal of the cause, he concludes that the method suggested by Sims and adopted by Emmet, in securing drainage and rest of the inflamed viscus, by the formation of an artificial vaginal fistula, is less effectual and less simple than thorough dilating of the urethral canal to a degree paralyzing its contractility, which may be repeated as often as necessary.

In exceptional cases he would curette the endo-vesical mucous membrane with a blunt wire curette, or brushing over its surface with diluted carbolic acid until the morbid sensibility is overcome—two or three applications, at an interval of a week or two, sufficing for a cure.

ARISTOL IN GYNÆCOLOGY.

Dr. von Swiecicki ("Medical Chronicle," July, 1890) reports a trial in twenty cases, including endo metritis, cervical hyperplasia, eczema vulvæ, parametritis, etc., in which he records highly satisfactory results. It was applied as powder.

DIAGNOSIS AS RELATED TO DISEASES OF WOMEN.

Prof. Wm. Goodell says, in the "Philadelphia Medical News," December, 1889, concerning the differentiation between disease and that of neurotic origin:

"From a large experience I humbly offer to the reader the following watch-words as broad helps to diagnosis:

"In the first place, always bear in mind what another has pithily said, that 'woman has some organs outside of the pelvis.'

"*Secondly*. Each neurotic case will usually have a tale of fret or grief, of cark and care, of wear and tear.

"*Thirdly*. Scant or delayed or suppressed menstruation is far more frequently the result of nerve-exhaustion than of uterine disease.

"*Fourthly*. Antelexion *per se* is not a pathological condition. It is so when associated with sterility or with painful menstruation, and only then does it need treatment.

"*Fifthly*. An irritable bladder is more often a nerve symptom than a uterine one.

"*Sixthly*. In a large number of cases of supposed or of actual uterine disease which display marked gastric disturbance, if the tongue be clean, the essential disease will be found to be neurotic; and it must be treated so.

"*Seventhly*. Almost every supposed uterine case, characterized by excess of sensibility and by scantness of will-power, is essentially a neurosis.

"*Eighthly*. In the vast majority of cases in which the woman takes to her bed and stays there indefinitely, from some supposed uterine lesion, she is bed-ridden from her brain and not from her womb. I will go further, and assert that this will be the rule, even when the womb itself is displaced, or is disordered by a disease or by a lesion that is not in itself exacting or dangerous to life.

"*Ninthly*. Groin-aches and sore ovaries are far more commonly symptoms of nerve-exhaustion than of disease of the appendages.

"*Finally*. Uterine symptoms are not *always* present in cases of uterine disease. Nor when present, and even urgent, do they *necessarily* come from uterine disease, for they may be merely nerve-counterfeits of uterine disease."

ANALGESIC POWER OF ANEMONINE (ANEMONE PULSATILLA).

Dr. C. Bovet is quoted ("Therapeutical Gazette," July, 1890) of attributing to this agent pronounced analgesic properties, when administered in reflex painful affections of the uterus, from diverse pathological causes, which accompany menstrual pain, whether dysmenorrhœa or amenorrhœa, or whether from metritis, parametritis, or ovaritis.

He has used it in thirty-four cases. Twenty-two were difficult menstruation without discernible cause, eight of metritis, and two each of ovario-salpingitis and uterine prolapse, in which he states the pain was relieved within forty-eight hours. The ordinary dose was one-sixth grain anemonine, administered in red wine.

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M. D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

Your reviewer having been present as delegate at the two great medical events of the year, viz.: the meeting of the British Medical Society, Birmingham, July 29th to August 1st inclusive, and the tenth International Medical Congress, Berlin, August 4th to 9th, thinks perhaps a short and superficial sketch of proceedings, etc., would be about as interesting as anything that he could offer for the coming month.

The attendance of medical men at the first-named exceeded 2,500; at Berlin between 6,500 and 7,000 registered.

A general criticism may be at this point perhaps allowed, and that is regarding the excess, as it has always seemed to him, in these and other colossal meetings relatively of the social as compared to the scientific aspect of these symposia; to the latter of which as would seem by right everything else ought to be subordinated. It is all very well for the casual medical man, and awfully pleasant; but surely too much time is taken up by junketings, and they are too distracting for good business results. There is too much of the big picnic about these immense gatherings; ordinarily I think the average visitor to a congress will instinctively get all the amusement he wants, and as he wants it.

At Birmingham we found a well-organized meeting, the Dermatological Section thereof (the first year of its distinct recognition in this Society, it being formerly included in that of General Surgery) was presided over by Jonathan Hutchinson, a fact in itself insuring success, a well-proven fact at the finish. A number of excellent papers were read by the home talent, as, for instance, by the President, and Drs. Radcliffe Crocker, Malcolm Morris, Colcott Fox, Brooke, of Manchester, etc.; others by foreigners, as Prof. Unna, and Dr. L. D. Bulkley, also one by title by Dr. A. R. Robinson, of New York, the doctor having found it impossible at the last minute to be present.

All were listened to during the several days by audiences of from forty to fifty interested medical men, and the discussions were active and instructive, and interest was maintained throughout, thereby comparing favorably sometimes with the work at the Berlin Congress.

Particularly were the proceedings good in the discussions following papers on "Alopecia Areata," and on a paper by Unna on the "Pathology and Treatment of Eczema."

There were rumors afloat of some unpleasant feeling between American and the home medical men in another, or other sections;

certainly nothing could have been more harmonious and friendly than in our own.

The proceedings of the Congress in Berlin opened in the customary manner, by an immense general meeting, held in the Circus Renz, at which the officers were elected, Prof. Virchow making the address of welcome, etc., and Professors Lister and Koch and others on special subjects. Later on, on the first, and morning meetings of the second day, the various sections elected their officers, who made their respective opening addresses. Prof. Lassar, who was also the Secretary General, was President of the Dermatological Section, and in his address sought to cover "The General Indications for Treatment in Acute Inflammatory Diseases of the Skin." As criticized by his peers, it was pronounced a somewhat perfunctory, and commonplace effort.

We did not hear much of the papers or discussions on Gonorrhœa by Noeggerath, Neisser, Doutrelepon and others, nor some of those on Syphilis and treatment thereof. Those discussions were often interrupted, and imperfect; doubtless the papers when printed in full will prove very instructive, and show a great deal of work.

Some interesting papers on Pigmentary Diseases were read, and discussions followed, and cases shown; notably by Köbner, of Berlin: one a case of Pigmented Multiple Sarcoma, showing effect of treatment, and relative cure by use of arsenic, excited great interest.

The papers most interesting, as it seemed to us, were those of Köbner, and Jonathan Hutchinson on the Etiology of Leprosy, in which he defended his theory of the "Causation of Leprosy by something inherent to a fish diet," exhibiting globes, charts, etc., and showing the geographical distribution, etc., of the disease in question. He made a gallant fight against those opposing, such as Kaposi and others.

Dr. A. R. Robinson read an interesting paper on Nanthoma Diabeticorum, which was discussed at length.

Dr. Havas, of Vienna, read a paper intended to prove identity of Lichen Planus, and Ruber; and was sustained by Kaposi: this was combatted by the American and English dermatologues present, some of the better known Germans also speaking on the same side; notably Hans v. Hebra, of Vienna, and Neumann, who formally recanted his former writings and teachings on the subject. It was a decided victory for American dermatology, for this has been the doctrine always held by almost all in this country competent to speak on the subject. It seems certainly to be decided that Lichen Ruber, Lichen Planus, and the Pityriasis Ruber Pilaris (of Devergie) are entitled to be considered as three separate and distinct entities.

Owing to want of time the Section adjourned before the question of "Nature and Treatment of Eczema," which was entered on the

catalogue for consideration, could come up; a loss in our opinion not at all compensated for by the length (not to say discursiveness) of the discussions on Gonorrhœa and Syphilis, some of the English and American, as well as Unna and others who had prepared papers, being forced to read by title.

Occasionally your reviewer visited other Sections, and by observation and comments of others has come to some of the following conclusions: first, that as before said, the social side of the meetings takes relatively too much time and attention, except perhaps that they are of this advantage, inasmuch as they give individuals of relatively less prominence a chance to rub shoulders with those of greater eminence in the profession; and to find out that they are very mortal, and often in some respects weak

Also that in this particular Congress the bureau work, considering the immense amount of it, was well and fairly, and pleasantly carried out, with the one exception of the Secretary General, about whose strange conduct both from his German colleagues and strangers, as well as the casual medical man with whom he came in contact, I could hear nothing but complaint.

Another point which all Americans and English deprecated was the waste, and even absolute loss of time, by the good nature perhaps, of the presiding officers of the Sections. The time would have been sufficient to have done much more work if anything like strict Parliamentary rules had been adhered to, to say nothing of the special rules of the Congress. There seemed often to be an utter incomprehension of these debating rules, or neglect, thereby allowing a prolix speaker or debater to take up an indefinite amount of time, and naturally leading to the withdrawal of good matter. This I think will be recognized by those present, and it was not confined to one or two sections.

It would also seem a thing to be recognized and insisted on at all future Congresses, if they should continue to be as large or larger than those lately held, that a writer or speaker should be compelled to state his premises as succinctly as possible, and with as little verbosity as he may, summarize his conclusions: so many amiable and clever men beginning at Genesis and continuing on to Revelations without even sparing us the Deluge. Some of these should consider, as it seems to us they do not, that they are speaking to presumably fairly educated medical men, and not to students.

Individually and collectively by the laity and profession alike, we all were treated in the kindest possible manner, and we know of no medical brother who does not look back with pleased recollection to his week in Berlin.

Returning via France, we took the opportunity of a short week in

Paris to attend daily the immense cliniques on Diseases of the Skin at the Hôpital St. Louis. Many of the more eminent men, as Fournier, Besnier, etc., were absent on vacation. However, Prof. Vidal, who takes his vacation in the winter months, was still there; and we spent two interesting mornings with him, having on one the good fortune of striking one of his Lupus days (it would seem as if he had all the Lupus cases of Paris, we were about to say France). He, or assistants, operated certainly on over thirty cases, and almost entirely by scarification after the manner as given under his "Treatment of Keloid" (*Progress in Medicine, Dermatol. Review, Brooklyn Medical Journal, Sept., 1890*). We were much impressed by his courtesy as well as by his argument, but left unconvinced that that was the only way, or even the best way sometimes, of treating the disease.

The cliniques as conducted by the several gentlemen attached are immense, doubtless the largest in the world; still, perhaps, on account of their very size they left one with the impression of much to be desired or bettered.

In London your reviewer visited but one hospital, St. Thomas. The skin clinic there, as do all other clinics, languish in summer; it was the less needful to see the work there, as we had been in close communion with the best minds (dermatological), as Hutchinson, Crocker, Fox, Morris, etc., for nearly a fortnight in Birmingham and Berlin, and found that reciprocity, which is perhaps denied to commerce; existed certainly in our branch of the medical thought.

Very few of the French dermatologues visited Berlin; Leloir, of Lille, being the only one of note I remember. They themselves were the losers thereby, as I think they now recognize—all French medical men in other Sections being treated with the most punctilious delicacy and appreciation.



MEDICAL JURISPRUDENCE.

THE LAW AND THE DOCTORS.—LIQUOR, DOCTORS, AND THE PUBLIC PEACE.

BY SIDNEY V. LOWELL.

The public are vitally interested in securing for their police protection sober men. As a policeman holds a life office, he can only be discharged for cause. If the cause alleged be inebriety, the complaint must be signed by the local police-surgeon.

Two rather interesting cases have recently appeared in the permanent reports of the court of last resort in this State, both relating to New York city policemen.

In the case of Patrick McAleer, the policeman, an old and faithful officer, having lost his meals in the confusion of his family moving from one house to another, demanding his active exertion all the time he was off duty, was induced, by his anxious but indiscreet wife, to take two drinks of brandy, one, unfortunately, having been brought to him by her after he had gone upon duty. It produced intoxication and led to his discharge.

The Court of Appeals sustained the Police Commissioners after a humane and careful examination of the facts, Judge Earl, who wrote the opinion of the Court, naively saying, referring to the officers' wife: "Instead of carrying him brandy between twelve and one o'clock, why did she not carry him food?" (It seems a pity the Judge had not been there then to argue with her, and obviously useless later.) He continues, decisively: "There seem to have been no good reasons for his taking two drinks of brandy upon an empty stomach."

Let this be set down as a general *lex-medico* decision: Two drinks of brandy upon an empty stomach are not to be countenanced.

The other case was that of Officer Hogan. He had served on the force for eighteen years, always a faithful and good officer. During the great street-car-riot strikes, early in the year 1889, he was continuously on duty for five days. Exhausted by cold and fatigue, his sergeant told him to go home and report "unfit for duty;" but he said that in the trouble going on that "it would be mean" so to do, and continued at his post. He however took one drink of brandy and peppermint to sustain his strength.

The brandy and peppermint having been perceptible in his breath and speech, though but slightly, he was tried, found guilty of intoxication, and dismissed from the service. The Court divided upon this case, the majority taking the officer's part. Judge Finch, writing the prevailing opinion, says: "Summing it all up, it comes to this: An officer on duty, when the service is necessary and perilous, takes brandy and peppermint in a single instance, as a medicine, to palliate suffering and enable him to continue in the performance of his duty. Unfortunately, it produces a temporary intoxication and fails as a remedy. Is that intoxication a breach of discipline and a violation of the rules? . . . Can any one say, with a grain of justice in saying so, this was conduct unbecoming an officer?"

Well for this poor fellow that he had at least not violated the maxim in the other case, then undecided!

NEW BOOKS AND BOOK NOTICES.

All books received by the JOURNAL are deposited permanently in the Library of the Medical Society of the County of Kings.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by Charles E. Sajous, M.D., and seventy Associate Editors. O. c. F. A. Davis, Publisher.

The five volumes of this "Annual," which constitute the "Issue of 1890," are the most complete which have as yet been issued. One of the most noticeable improvements consists in the creation of departments on subjects heretofore considered under general heads. Syphilis, edited by Prof. White, of Philadelphia, appears as a special section; as does also Thoracic Surgery, under the editorship of Prof. Gaston, of Atlanta. These are but illustrations of a principle which has been adopted by the editor and which makes the "Annual" much more valuable as a book of reference. Editors and publisher are alike to be congratulated that they have succeeded in bringing the "Annual" to so high a state of perfection.

A PRACTICAL TEXT-BOOK OF THE DISEASES OF WOMEN. By Arthur H. N. Lewers, M.D. London. Second edition, with 146 illustrations. D. c. P. Blakiston, Sons & Co., 1890.

In this little manual we find some things which are to be commended, as, for instance, the method which the author advises in the investigation of a case, with the exception of the manner in which he speaks of Sims's speculum. This instrument he regards as essential for operations on the vagina and cervix, but does not even mention its use in ordinary examinations; in fact, he declares that "Fergusson's is the one which will be found most generally useful." Nor does he adequately describe or figure "Sims's position," nor the manner of introducing Sims's speculum, although he advises the use of this speculum in dilatation of the cervix both with Hegar's dilators and with tents. In the description of the method of employing these dilators he advises putting the patient in the lithotomy position and thoroughly washing out the vagina with some antiseptic solution, then introducing Sims's speculum and seizing the anterior lip of the cervix with a volsella. The only other reference to the manner of introducing Sims's speculum is in the matter descriptive of Sims's retractor. This, he says, presses "forwards the anterior vaginal wall, while the speculum presses back the posterior vaginal wall and perineum. An assistant at the same time should draw the patient's right buttock upwards." We should like to see the manipulations of one who, having read this entire chapter, should endeavor for the first time to introduce a Sims's speculum, his patient being placed in the lithotomy position, the retractor pressing forwards the anterior vaginal wall, the speculum pressing backwards the posterior vaginal wall and perineum, and an assistant drawing the patient's right buttock upwards! It is true that the author does not say just this; but any one, reading his description as a whole, could draw no other inference than that this was the method of using Sims's speculum.

The author speaks of Apostoli's method of treating fibroids, in the following language: "That this treatment has failed to accomplish a great deal that was originally claimed for it by its introducer is certain. It is also certain that the treatment in question is attended with considerable danger; and, in short, it is

very doubtful whether it will ultimately find any place in legitimate practice." And this statement in face of all that has been done by Apostoli himself, and said by such authorities as Keith and Skene!

In the preface to this edition the author speaks of Tait's operation for rupture of the perinaeum, in the following commendatory terms: "So far as my own experience of it goes, this operation, both as regards the mode of making the raw surface and the mode of passing the sutures, is a great improvement on the older methods." From such a statement as this one naturally expects that the author's experience has been considerable with this operation, and yet on page 114 he says: "I have only tried this operation in one case quite recently. I had read the description of it some years ago; it was, however, a description without figures, and I did not understand from it the exact *modus operandi*. The figures, which I only saw lately, make the description plain. The result in the case referred to was so very satisfactory that, so long as the operation is followed by similar results, I shall certainly prefer it to that described on pages 107-112." An opinion based on a single case cannot be expected to have much weight.

"In its present form we should hardly advise the use of this manual as a text-book for students.

ON PERINEORRHAPHY BY FLAP-SPLITTING. By Fancourt Barnes, M.D., M.R.C.P. Second edition. O. c. London, 1890: John Ball & Sons.

Those who desire, in a concise form, the method of Lawson Tait for restoration of the perinaeum will find it in this brochure of twenty-two pages. We regret to say, however, that the description is not as clear as might be; in fact, this operation has always labored under the disadvantage of having been, even by its author, imperfectly described.

MINERAL SPRINGS AND HEALTH RESORTS OF CALIFORNIA: with a Complete Chemical Analysis of every Important Mineral Water in the World. By Winslow Anderson, M.D. Q. c. The Bancroft Company, 1890.

An admirable book of reference: giving as it does analyses of so many mineral waters.

MASSAGE AND THE ORIGINAL SWEDISH MOVEMENT. By Kuwe W. Ostrom. Illustrated. S. c. P. Blakiston, Son & Co., 1890.

This little book describes the various movements employed in this system, massage, etc., and their application to all parts of the body, in disease. The author draws the following conclusions from his experience:

1. That the massage and movement treatments should be applied only by educated and properly trained persons, with due regard to the physician's directions.

2. That the operator (if not a medical doctor) should, as a rule, be of the same sex as the patient.

3. That there should be a place where skilful and trained operators could have an opportunity of passing an examination and of registering, thus protecting not only themselves and the profession, but the general public also.

RAILWAY SURGERY: A Practical Work on the Special Department of Railway Surgery, for Railway Surgeons and Practitioners in the General Practice of Surgery. By C. B. Stemen, A.M., M.D., LL.D. With numerous illustrations. O. c. J. H. Chambers & Co., 1890.

This volume covers a great deal of ground, and would, we imagine, be of much value to the railway surgeon not only, but also to the general practitioner. The topics of special interest treated are: Transportation of injured railway men, temporary treatment in cases of railway injury, shock in railway injuries, hæmorrhage from railway injuries, color-blindness, railway concussion of the spine, and the method of taking care of the sick and injured on foreign railroads. We notice that the author favors ether as an anæsthetic, giving it as his opinion that it should be used in all cases, as being much safer and just as certain to produce complete anæsthesia as chloroform. The other topics discussed are such as are found in treatises on general surgery.

CORRESPONDENCE.

CENSUS OF HALLUCINATIONS.

To the Editors of the Brooklyn Medical Journal.

May I ask for the publicity of your pages to aid me in procuring co-operation in a scientific investigation for which I am responsible? I refer to the *Census of Hallucinations*, which was begun several years ago by the "Society for Psychical Research," and of which the International Congress of Experimental Psychology at Paris, last summer, assumed the future responsibility, naming a committee in each country to carry on the work.

The object of the inquiry is twofold: 1st. To get a mass of facts about hallucinations which may serve as a basis for a scientific study of these phenomena; 2d, to ascertain approximately the *proportion of persons* who have had such experiences. Until the average frequency of hallucinations in the community is known, it can never be decided whether the so-called "veridical" hallucinations (visions or other "warnings" of the death, etc., of people at a distance), which are so frequently reported, are accidental coincidences, or something more.

Some 8,000 or more persons in England, France and the United States have already returned answers to the question which heads the census sheets, and which runs as follows:

"Have you ever, when completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice; which impression, so far as you could discover, was not due to any external physical cause?"

The "Congress" hopes that at its next meeting, in England in 1892, as many as 50,000 answers may have been collected. It is obvious that for the purely statistical inquiry, *the answer "No" is as important as the answer "Yes."*

I have been appointed to superintend the census in America, and I most earnestly bespeak the co-operation of any among your readers who may be actively interested in the subject. It is clear that very many volunteer canvassers will be needed to secure success. Each census blank contains instructions to the collector, and places for twenty-five names; and special blanks for the "Yes" cases are furnished in addition. I shall be most happy to supply these blanks to any one who will be good enough to make application for them to

Yours truly, (Professor) WM. JAMES,
Harvard University, Cambridge, Mass.

A POSITIVE ELECTRODE.

BROOKLYN, Sept. 16, 1890.

To the Editor of the Brooklyn Medical Journal.

Permit me through the columns of your journal to recommend to gynæcologists the use of a warm poultice in place of the large clay conductor heretofore used in the application of electricity by the "Apostoli method."

All who have had occasion to prepare and apply the latter have realized that it requires time and care to keep it in order; that it is cold and uncomfortable to the patient, and more or less uncleanly.

I began the use of an indian-meal poultice in place of it several months ago, and find its preparation simple, its application very comfortable to the patient; it is an excellent conductor of electricity, moreover it is cleanly.

My mode of application is this: I have in readiness always a number of "butter cloth" poultice bags, made as wide as my metallic plates for abdominal use, and twice as long.

Before consulting hours begin, my attendant prepares a quantity of rather thick indian-meal mush, and keeps it warm for use. A sufficient amount of this to make a layer an inch thick is placed in a bag of suitable size, and pressed evenly over the metal plate. A layer of "spongio-piline" is placed over the patient's abdomen, under which the electrode can be slipped with ease. A sand-bag the same size is applied over both. By this method I have been able to do all that can be done with a clay electrode, and the comfort which is experienced by the patient alone would make it a better appliance.

ELIZA M. MOSHER, M.D.

181 Joralemon St., Brooklyn.

MISCELLANEOUS.

UNIVERSITY OF THE STATE OF NEW YORK.

LAW AND MEDICAL STUDENTS' EXAMINATION, 1890.

GEOGRAPHY—TIME, ONE AND ONE-HALF HOURS, ONLY—56 CREDITS; NECESSARY TO PASS, 42.

1. How many miles are there in a degree of latitude? What is the latitude of a place on the equator? What is the width in degrees of the torrid zone? 3
2. Why is the capital of a State so called?..... 1
3. What is the gulf stream? What is its general direction? How does it affect the climate of adjacent places?..... 3
4. Which is the largest State in the Union? Which is the most thickly populated?..... 2
5. Name the States and territories that border on Mexico?.... 4
6. Name two large cities on the Mississippi River near the head of navigation..... 2
7. What is the capital of Ohio? Give the name and location of its metropolis..... 3
8. What are the two great mountain systems of North America? Give the general direction of each 4
9. Name a large river of North America that flows into the Arctic Ocean. Into Behring Sea. Into the Pacific Ocean. Into the Gulf of Mexico. Into the Gulf of St. Lawrence..... 5
10. Name the three principal rivers of South America 3
11. Which empire of the world is largest in area? Which has the greatest population 2
12. To what natural division of land does Florida belong? Ireland? Sahara?..... 3
13. Where is the Cape of Good Hope? Cape Horn?..... 2
14. Name three islands in the Mediterranean Sea..... 3
15. What countries form the Scandinavian peninsula? 2
16. Give the location of Glasgow, Belfast, Manchester, Lyons, Brussels; and tell for what industry each is noted..... 10
17. Where are the Sandwich Islands? Where is the island of St. Helena? 2
18. What is the form of Government in France? In Spain?.. 2

AMERICAN HISTORY—TIME, TWO AND ONE-HALF HOURS, ONLY—44 CREDITS; NECESSARY TO PASS, 33.

1. Name two noted French discoverers and the region discovered by each..... 4

2. By whom was Rhode Island founded, and why? 2
3. By what European nation was Canada settled? By what war did England acquire it? 2
4. What two measures of Parliament were chief causes of the Revolution? 2
5. Describe Burgoyne's invasion in 1777. What was his plan and how far was he successful? 3
6. When was the United States constitution adopted and what condition of affairs led to it? 3
7. In what war did the capture of Quebec occur? Give the names of the opposing generals and describe the plan of attack. 4
8. Who were the Hessians? In what battle were they routed and by what general? 3
9. From what government was Florida purchased? Louisiana? 2
10. What was the cause of the Tripolitan war, and how did it result? 2
11. What position did the South take regarding the admission of Texas, and why? 2
12. What did the Kansas-Nebraska bill provide? What was the effect of its passage in Kansas? 2
13. What general captured Vicksburg in '63? Where is it situated and why was its capture important? 3
14. What was meant by nullification? In reference to what law was it first proposed, and by what State? 3
15. Has the President the right to declare war? 1
16. Mention three distinguished American authors and a production of each 6

ARITHMETIC—TIME, TWO AND ONE-HALF HOURS, ONLY—40 CREDITS;

NECESSARY TO PASS, 30.

1. How may the correctness of the quotient in division be proved? 2
2. In what two ways may a fraction be multiplied? 2
3. Find the total number of bushels of wheat produced in the following States in 1879: Illinois, 51,136,455; Indiana, 47,288,989; Ohio, 46,014,869; Michigan, 35,537,097; Minnesota, 34,625,657; Iowa, 31,177,225; California, 28,787,132; Missouri, 24,971,727; Wisconsin, 24,884,689. 5
4. A farmer gave $\frac{3}{4}$ of his farm to one son and $\frac{1}{4}$ of what was left to another; what part of the whole farm did he give the second son? 2
5. Find the difference between 1.010101 and .999999. 2
6. Add 16 gal. 3 qt. 1 pt.; 17 gal. 1 qt. 1 pt.; and 15 gal. 1 pt. 3

7. How many pounds in a long ton? How many sheets of paper in a quire?..... 2
8. How many paving-stones 6 in. by 8 in. will be required for a street 50 feet wide and 1,248 long?..... 3
9. Define capital stock, par value, market value. 3
10. A pays a tax of \$42 on property valued at \$3,500. What is the rate?..... 2
11. What sum invested in business will yield an annual income of \$1,725, if the net profit is 15 per cent?..... 2
12. Find the bank discount and proceeds of the following note, if discounted on the day of issue 3

\$5,000.

ALBANY, N. Y., Dec. 20, 1890.

Sixty days from date I promise to pay to John Lenox, five thousand dollars, value received.

WILLIAM HARPER.

13. When is a promissory note negotiable? Is the above note negotiable? 2
14. A lawyer collected 75 % of an account of \$3,416, and charged 5 % commission. What amount should he return to his client? .. 3
15. What is compound interest?..... 1
16. A, B and C engaged in trade with a joint capital of \$9,000. At the end of a year A's gain was \$1,250, B's \$1,000, and C's \$1,500. What was each partner's share of the capital? 3

GRAMMAR—TIME, ONE AND ONE-HALF HOURS, ONLY—56 CREDITS;
NECESSARY TO PASS, 42.

Exercise.—1. “The *last hours* which Argyle *passed* on the coast of Holland were hours of *great* anxiety. 2. Near him *lay* a Dutch man of war whose broadside *would* in a moment *have put* an end to his expedition. 3. *Round* his *little* fleet a boat was rowing, in which were some persons with telescopes *whom* he suspected to be spies. 4. But no effectual step was *taken* for the purpose of detaining him; and on the afternoon of the *second* of May he *stood* out to sea before a *favourable* breeze.”

1. Select from the exercise and write in a column (*a*) a complex sentence; (*b*) a compound sentence; (*c*) a prepositional phrase; (*d*) a relative clause; (*e*) a proper adjective; (*f*) a collective noun; (*g*) a proper noun; (*h*) a personal pronoun of the third person; (*i*) a noun in the plural regularly formed; (*j*) a noun in the plural irregularly formed..... 10
2. Compare the adjectives *last*, *great*, *little*, *favourable*. ... 4
3. Give the principal parts, including the present participles, of the verbs: *passed*, *lay*, *put*, *take*, *stood*. Which of these verbs is regular? 6

4. Parse in full each of the following words of the exercise :

<i>hours</i> (1st line).....	3
<i>would have put</i>	3
<i>Round</i>	2
<i>whom</i>	3
<i>second</i>	3
5. What is the office of conjunctions? Select an example from the exercise 2
6. What is language? Of what does English grammar treat?... 2
7. Decline the pronouns, *I* and *thou*, in singular and plural... 6
8. What does the indicative mood express? The imperative mood?... 2
9. How are verbs in the passive voice formed? Select an example from the exercise..... 2
10. Correct the following sentences and give a reason in each case :

(a) Who did you say you met this morning?	2
(b) Has everybody performed their examples?... ..	2
(c) I found it laying on the ground.... ..	2
(d) Is it me you wish to see?.....	2

RHETORIC AND ENGLISH COMPOSITION—TIME, TWO AND ONE-HALF HOURS,
ONLY—48 CREDITS ; NECESSARY TO PASS, 36.

1. What are the chief differences between prose and poetry?... 2
2. Define purity, propriety and precision..... 3
3. What is a climax? What is hyperbole? Is the frequent use of these figures desirable and why?..... 4
4. Correct the following sentences and give your reasons in each case:

(a) He seems to enjoy the universal esteem of all men....	2
(b) His bosom was swollen with the flame of patriotism..	2
(c) Your coat does not set well.....	2
(d) What book is that laying on the table?.. ..	2
5. Name and define each figure of speech used in the following sentences :

(a) The bench should be incorruptible	2
(b) The very walls will cry out against you.....	2
(c) A cloud of sorrow darkened his face.....	2
6. Give in your own language a prose rendering of the following :
 Cromwell, I charge thee, fling away ambition :
 By that sin fell the angels ; how can man, then,
 The image of his maker, hope to win by it ?
 Love thyself last ; cherish those hearts that hate thee ;
 Corruption wins not more than honesty.
 Still in thy right hand carry gentle peace,
 To silence envious tongues. Be just, and fear not :

Let all the ends thou aim'st at be thy country's,
 Thy God's, and truth's; then, if thou fall'st, O Cromwell,
 Thou fall'st a blessed martyr!..... 5

7. Give four rules for the use of capitals with examples from the above selection..... 4

8. Give a rule for the use of the comma, the colon, the semicolon, the interrogation point and the exclamation point, with an illustration of each from the above selection..... 5

9. Write a letter of introduction, containing not less than fifty words, which will be credited for its beginning, ending, punctuation, spelling, grammar and general style..... 6

10. Give the abbreviated form of each of the following, with the correct punctuation marks: (*a*) before noon; (*b*) member of Congress; (*c*) United States of America; (*d*) Pennsylvania; (*e*) December.... 5

ELEMENTS OF NATURAL PHILOSOPHY—TWO AND ONE-HALF HOURS, ONLY—

24 CREDITS; NECESSARY TO PASS, 18.

1. What do you mean by the attraction of gravitation? Give the laws of gravitation. 3

2. What do you understand by capillary attraction? Give an example..... 2

3. What is the unit of atmospheric pressure?..... 1

4. What is the difference between adhesion and cohesion?... 2

5. How do solids, liquids and gases rank as conductors of heat? 3

6. What is the difference between a noise and a musical tone? 2

7. How do you explain the breaking of vessels by water freezing in them?..... 1

8. How is light produced?..... 2

9. Explain the construction and operation of an ordinary steam-engine..... 3

10. State the principle of Archimedes 2

11. What is meant by the "potential" of electricity?..... 1

12. How would you make a battery?..... 2

SANITARY MOVEMENT IN BROOKLYN IN 1859.

WITH A PAPER BY A. N. BELL, M.D.

[*From the Brooklyn Evening Star, Friday, June 10, 1859.*]

A SANITARY ASSOCIATION.

The report of a meeting held last evening, for the purpose of organizing a Sanitary Association, occupies a large portion of this paper, to the exclusion of other matter. We have given this space to it, because we think the importance of the subject deserves as much.

The somewhat lengthy but interesting paper which was read before the Association, as well as other statements and statistics prepared by men of scientific skill and much practical observation, prove that of the mortality of the human race a heavy percentage might be prevented by a judicious observance of the laws governing health and disease, and the proper application of preventive agencies. In large cities, especially, an annual unnecessary mortality prevails to a frightful extent.

To save some of the lives thus sacrificed Sanitary Associations have been organized. The general objects of these organizations are to collect and disseminate information relative to the causes which prejudice general health and generate disease, to investigate and expose nuisances and abuses of a dangerous character, and to secure the proper execution of sanitary laws.

The last is, perhaps, the most important of the duties undertaken by the Association. Officials are proverbially negligent in the discharge of manifest responsibilities. The only law they dare not disobey is the law of Public Opinion. That, properly exercised, seldom fails.

Pursuant to invitation, a number of gentlemen assembled last evening, at the residence of Dr. A. N. Bell, Joralemon Street, for the purpose of organizing a Sanitary Association for this city. Among those present were Drs. Bell, Jones, Cullen, McClellan, Mulhallan, Cochran, Isaacs, Health Officer Boyd, Hon. John Greenwood, ex-Mayor Hall, Captain Farley and Mr. Brownson. Letters were received from a number of prominent citizens who were unable to attend, but who expressed the warmest sympathy with the proposed enterprise. The first part of the proceedings was informal, the gentlemen present offering various suggestions and referring to interesting facts affecting the public health.

OBJECT OF THE ASSOCIATION.

Dr. Bell, in introducing the subject, called attention to a similar association in New York, which had been recently organized by prominent citizens, and which was rapidly increasing in numbers and influence. From the Constitution of this Society we make the following extract, which shows the general object of Sanitary Associations :

The objects of this Association shall be the improvement of the sanitary condition of the people, and, so far as connected therewith, the advancement of their economic and moral interests :

"First, By promoting the investigation of facts and principles relating to personal, domiciliary and public Hygiene ;

"Second, By diffusing information on the laws of health and life, and the best means for their application ;

“*Third*, By such other influences and agencies as may be deemed expedient.”

Dr. Bell proceeded to state how the association might carry out the purpose set forth by collecting and publishing information on sanitary questions, and diffusing among the people, who are so often ignorant in the premises, knowledge of the influence on health and on the duration of life of the nuisances and impurities existing in large cities. He referred to the imperfect cleansing of the streets, the piles of mud and dirt being often allowed to remain in the streets for weeks; to the introduction of water, and the establishment of a system of sewerage, which would lead to the opening of the streets and the breaking up of old sinks and cesspools, the effect of which was often deleterious. All these and other matters would properly come under the consideration of the proposed association, whose duty it would be to call the attention of the public and the authorities thereto, and induce such action as should remedy the evil.

INEFFICIENCY AND CORRUPTION OF THE AUTHORITIES.

Dr. Cullen thought the difficulty was not that the existence of nuisances was unknown. The executive officers of the city understood precisely the state of the case, but would not enforce the laws. There were ordinances enough to meet the difficulty, but they were dead letters, and only served to bring the municipal administration into contempt. Political influence and corruption prevented the enforcement of the laws. He did not lay this to the charge of any one party more than another; but the rumsellers and contractors governed the city and overruled respectable and law-abiding citizens. Dr. Cullen, however, expressed himself favorably as to a sanitary association.

Judge Greenwood thought the evil more deeply seated than had been stated. Mismanagement, mal-administration and corruption were the results of popular government, which he considered a failure, especially in large cities.

Dr. Jones said the greatest impurities and most fruitful sources of disease were not found above ground; they existed beneath the surface, in cellars where the poor were crowded, and in some public places. He then described the condition of the Third Precinct Station House, forty-seven persons being confined where there was not accommodation for ten. The condition of the cells and the sleeping apartments, as explained by Dr. Jones, is most disgraceful to the city. The rooms were dark, damp, and noisome, and the walls covered with mold. Experience in his profession had convinced him that the great proportion of diseases treated at dispensaries proceeded from causes of

a similar nature. He also narrated some cases of families he had visited in cellars of the most offensive and destructive character.

Ex-Mayor Hall also stated facts which had come to his knowledge during his official term, and indicated the absence of a proper sanitary system.

The general opinion expressed during this conversation was that an association such as that proposed would be of great importance in creating a public sentiment that should act upon the people and the officers whose duty it is to enforce the laws for the maintenance of health and the prevention of disease. After some further informal proceedings, Captain Farley was called to the chair, and on motion the meeting resolved itself into a Sanitary Association. Dr. Bell then, at the request of the Association, read an interesting paper touching the subject under consideration. It contains a statement of facts of such interest at all times, and especially at this season of the year, that we print it in full.

DR. BELL'S PAPER—SANITARY HISTORY.

It is a common impression that a great mortality is an unavoidable necessity to city population. This is far from being correct. If proper attention was paid to the sanitary condition of cities, the average duration of life would increase in like ratio with the population. Evidence of this is found in the health statistics of Geneva, where they have been observed with greater accuracy, and for a longer period, than in any other city in the world. Health registers were established in Geneva in 1589, and they are regarded as pre appointed evidences of civil rights, and are, consequently, kept with great care. The registration includes the name of the disease which has caused death, entered by a district physician, who is charged by the State with the inspection of every one who dies within his district. A table is made up from certificates, setting forth the nature of the disease, specifications of the symptoms, and observations required to be made by the private physician who may have had the care of the deceased. The increase of population has been followed by a proportionate increase in the duration of life. In the year 1589, the population was 13,000; and the probabilities of life were, to every individual born, 8 years, 7 months and 26 days. In the seventeenth century, the population increased to 17,000, and the probabilities of life, to 13 years, 3 months and 16 days, and so on continuously. From 1814 to 1833, the population being from 24,158 to 27,117, the probabilities of life for every individual born, were 45 years and 29 days; and at the present time, the probabilities of life are over 46 years. Sanitary science is more thought of and better attended to in Geneva than anywhere else. In

an establishment for the care of orphans taken from the poorest classes, out of 86 reared in 24 years, only 1 died.

At all periods of history and in all communities, popular writers refer to the simplicity, the health and the enduring hardihood of their fathers. And it would be easy to show in literature how each century has looked back on its predecessor, as a degenerate child lamenting the departed excellences of its ancestors; so that it would appear by this scale of descent, that we have less of everything that makes a people great and valuable, than our forefathers. And some writers among us refer to the agility of the savages of this continent as an evidence of excellence lost by excessive refinement. The belief is inculcated that barbarous nations possess the greatest energy and strength, and the luxuries of civilization are lamented as a degeneracy of bodily vigor and muscular activity. Opinions like these involve a scale of descent which would tend to show that each generation has less of everything calculated to make it great and good, than the last preceding.

Such statements are wholly inconsistent with facts.

The perpetual superiority of the natives of temperate climates is owing to the formative conditions there which develop the strongest constitutions.

Even in climates to which they are least accustomed they display powers of endurance amidst the causes of disease which slay thousands of those who are habitually subject to them, and who for this very reason are lacking in that vigor of constitution which is the best safeguard.

During the great plague in Alexandria in 1835, the French, English, Russian and German residents, who were exposed to the cause in its fullest intensity, suffered in the proportion of only five per cent., whereas the Arab population suffered in the proportion of fifty-five, the Malays in the proportion of sixty-one, and the negroes and Nubians in the proportion of eighty-four per cent. That is to say, falling upon the several nations in close proximity to their general sanitary condition, the attacks being lowest among the Europeans.

In strict correspondence with this ratio of mortality, based upon the degree of civilization, are the vital statistics of the United States.

MORTALITY IN THE UNITED STATES.

Comparing together a mass of statistics from various parts of the United States, the annual death rates from all causes is about 1 in 66; among the whites alone, 1 in 80; among the negroes, 1 in 31; among the Indians, 1 in 27; among the inhabitants of New York City, 1 in 27.15, or nearly the same as that of the uncivilized Indians.

THE INDIANS.

In the statistical report of sickness and mortality, prepared under the direction of the Surgeon General of the U. S. Army, the report on the Winnebagoes in Minnesota is one death in every 26.23 inhabitants, this rate being among the largest reported.

This high rate of mortality among the Winnebagoes is attributed by Dr. Day, physician to the agency, to the Spartan treatment to which they are subjected in infancy. "As soon as an infant is born it is laid on a board, previously covered with a few folds of blanket; then with a strip of cloth two or three inches wide, is as amply and securely bandaged from head to foot as an Egyptian mummy, and then strapped to the board, care being always taken to include the arms, which are extended upon the sides of the infant, and leaving nothing out of the bandage but its head. In this straitened position they spend the greater part of the first year of infantile life, remaining at times for weeks without being taken from the board. The effect of this cradle (?) with the heavy woollen bandages is to interfere with, if not entirely preclude, the healthy functions of the skin. The excrements of the child's body collect, excoriating the skin and keeping up a constant irritation. The motions of the limbs, the only voluntary exercise an infant can have, and one so necessary to the development of its physical powers, being entirely precluded, it soon becomes weak and enfeebled. But the most pernicious effects of strapping their infants upon these boards is exerted upon the brain.

Being always laid upon their backs, with little or nothing between the hard board and the imperfectly ossified head, the continued pressure exerted by the weight of the head almost universally produces a displacement of the occipital bone inwards, causing lockjaw, paralysis, etc., and deranging the functions over which the cerebellum presides. They think it a mark of great comeliness to have the head perfectly flattened behind; and the Indian mothers show much anxiety in this respect.

It is wrong to suppose Indian children are better capable of surviving less careful treatment in infancy than are those of the whites. The former are generally born with less vigorous constitutions than the latter; and taking into consideration the numerous causes of disease and death to which these forest children are subjected, the wonder is, how *any* survive, not why so many die."

NEW YORK STATE AND CITY.

The recent report of the New York State Senatorial Committee on the sanitary condition of the city of New York, has made us lamentably familiar with a state of things there, which, in relation to mortality,

singularly comports with the death-rate of the uncivilized Winnebagos, the probabilities of human life in New York being only about one per cent. greater than among the Winnebagos.

And this correspondence of mortality, though attributable to totally different causes, is nearly alike in ratio for the different ages, 70 per cent. of the whole being children. Where infant life is not only neglected, but wilfully sacrificed, as among the American Indians, the tenement proprietors of New York and other uncivilized communities, there is never any great care taken of adult life.

Indifference and cruelty are thus bound up in each other, and the practice of putting children and aged persons to death in various ways is known to be common among most barbarous nations.

Savage nations generally practise the belief that there is an advantage in removing that portion of every population which is unable to provide self-subsistence; hence, they openly put to death infants and the aged. The same error prevails among a large class in civilized communities; and those who entertain it argue for a compensating advantage in the removal of a worthless portion of surplus population. But this is an exceedingly superficial view, and only worthy of those who most openly act upon it. It is not the surplus, but the valuable portion of life thus thrown away. To whatever extent the duration of life is diminished by noxious agencies, so much productive power is lost; and every community is poor and powerless in the inverse ratio to the average duration of human life. Every death under the age of fifteen years carries with it a positive loss to the community; because, previous to this age, sustenance involves a cost—a direct outlay—whilst, if life is preserved, a productive member of society is added, and remuneration rendered. And if the probabilities of life are so low as to make the average adult age young, the proportion of widowhood and orphanage is necessarily increased, and the productive members of society proportionately burdened. If a husband dies in the early years of his married life, he leaves, as burdens on the world, a widow or children, for whom, in all probability, if he had lived, he would have labored.

It is not the nature of mankind that great evils like these should exist within the scope of civilization; and the highest state of human progress furnishes the standard to which all should be elevated. Selfishness and barbarism are noxious agents everywhere; and as such they should not be tolerated. For it is neither the nature nor the habit of the human constitution to become so accustomed to conditions inconsistent with the highest state of human progress as to be unaffected by them. Cleanliness and refinement bear the same relation to each other in the progress of civilization as do filth and uncleanness in the degradation of uncivilized communities. The connection of cleanliness with

health is everywhere manifest in direct ratio with mental culture. Indifference to life, and indifference to the purity and amenity that sweeten existence, must necessarily go together.

It is frequently remarked that the luxuries of the rich and the miseries of the poor equalize the scale of happiness, by being alike detrimental to health. But if we consider how very small must be the proportion of deaths from actual poverty, as compared with the number from other and removable causes, and apply the same rule to country population, where the proportion of poor is greater, yet healthier, we find in this circumstance an abundance of evidence of other causes than poverty which occasion the excess of mortality in cities.

The worst effect of poverty is that it leads to filth and neglect, and this constitutes an insalubrity which affects the whole community. Personal regulations are neither just nor practicable in carrying out the most effective measures for the promotion of health in populous communities. They undermine self-respect and destroy self-direction. They are inconsistent with independence and the spirit of manliness which civilization in every respect inculcates. But contact with well-cleaned streets and external purity begets a distaste for internal filth and degradation, and there are none so degraded or impure as not to be benefited and elevated by association with cleanliness. Indeed, the only successful barrier to the appalling epidemics of ancient times is to be found in the progress of sanitary reform. By it diseases, which once swept the human race before them, are now either buried in the dust or barricaded in the corrupting dens of lingering barbarism.

Wherever misery is manifest, there always exist at man's disposal means of mitigating or removing it. To find out and apply these means is advancement in civilization. And could sanitary rules be made to bear equally, the list of diseases capable of being dispelled by civilization would be much increased.

Ordinary occupations rarely have anything in them incompatible with health. And disease and short life, when associated with special pursuits, are usually consequent on the omission of precautionary measures in the removal of pernicious influences. So that these influences form no valid argument against the proper exercise of such pursuits.

The safety-lamp of Sir Humphrey Davy protects the miner from the terrible choke-damp, which, if neglected, is nearly always followed by fatal consequences; while the habitual neglect of a slower poison under other circumstances is attended with equally fatal though less sudden results. When an evil agency which could be abolished is permitted to work on the human race at large, it is difficult to perceive into how many channels its deleterious current may run. The pecuniary cost of

pernicious influences may be measured by the charges attendant on the duration of life, and the reduction of the period of working ability, and the cost will also include much of the attendant vice and crime as well as the destitution which comes within the province of pauper support. It is in this way that burdens are created and costs entailed upon the industrious survivors of every community in direct ratio with a high mortality.

The miserable, degraded, and sickly portion of every community is weak in proportion as the highly cultivated and healthy portion is strong. To assist the weak in applying such sanitary measures as will protect mankind at large from the injuries which each, in a narrow-minded selfishness, would inflict on his neighbor, is therefore both rational and right.

For these purposes Sanitary Associations have been instituted.

These are societies of recent formation, chiefly in England. They have for their objects the removal of those evils which occasion premature death. They work with natural causes; they profess to introduce no artificial elements; they look to the capacities which the Creator has given to the human frame to exist and act; and they desire full freedom to be given to these powers by the removal of whatever may tend to impair the natural endowments of Man.

USES OF A SANITARY ASSOCIATION IN BROOKLYN.

Have we not necessity for, are we not called upon, as citizens of Brooklyn, by our very proximity to the most deadly civilized city in the world, to constitute ourselves into a sanitary association? But proximity is not all. It is not necessary for me, however, to specify the evils lying at our own doors. He who runs may read. Every week we are reminded of the poison we are tolerating, by the continual droppings of life-buds at our feet. Are not these sins of omission as great against us as are those sins of commission by the untutored savages of the forest? Nor is this all. Our Health Officer informs us, last year, 179 persons died of small-pox! Every one of which deaths could have been prevented by a well-organized sanitary association. And it is not too much to assert that of the whole 6,499 deaths reported as occurring in Brooklyn during the year 1858, more than half of them were of diseases wholly preventable by proper sanitary measures.

The organization of a Sanitary Association in Brooklyn, at this time, is singularly appropriate. We are just on the eve of receiving a most potent means for the purposes of sanitary reform—an abundant supply of pure water. But a necessity to this is the upheaving of streets, numberless stagnant cess-pools and cisterns—all of which have most impor-

tant bearings on the objects of such an association, and, most of all, the establishment of a system of sewerage.

Cognizance of these measures, their benefits and their dangers accordingly as they are well or ill disposed of, are matters of the most vital importance. Nor should old abuses and impositions be neglected. Supervisors can inform us of thousands of dollars uselessly spent, in the formalities of coroners' inquests over subjects of still-birth and of findings of "no evidence of poison" where no analysis has been made, and other nearly allied absurdities. Our Dispensary officers can inform us of bank depositors availing themselves of the subscriptions of the charitable. But the evils are numberless. Let us constitute ourselves into a voluntary association, which shall have for its object the noblest work of the Christian philanthropist—that of alleviating human misery.

Let us look at this matter minutely, and reflect that at this very hour a death—the cause of which it may have been in our power to prevent—is carrying desolation to the hearts of a whole family—that for every two hours, this night, some one of the households of Brooklyn is visited by death—aye, that for every two hours this year, and the last, some one has died in our midst, and that it is in our power to lessen the frequency of these deaths at least one-half.

There are noble philanthropists in New York who have shouldered the responsibility of confessing their neglect of the great stream of death and misery which has at length well-nigh deluged the whole city with rottenness. There are many there now who are thoroughly alive to the danger of this bulk of dark waters. The New York Sanitary Association is the first fruit of their efforts.

Already the current is stayed in its course, and I venture to predict that these champions of health will achieve a reform which will be alike in its effects on the morals and the health of the community. And the New York Sanitary Association will not only be first in origin in America, but first in the amount of good accomplished. Yet we propose, to-night, to enter the lists for the championship. The prize is an awful one: it involves the life or death of more than ten per cent. of our population annually.

COMMITTEE TO PREPARE CONSTITUTION AND BY-LAWS.

A motion having been adopted that a committee of five be raised who should, at a future meeting, submit a constitution and by-laws for the government of the Association, the chair designated for that purpose: A. N. Bell, M.D., John Greenwood, Esq., H. J. Cullen, M.D., J. B. Jones, M.D., and Mr. Brownson. The Association then adjourned, to meet on Friday, 17th inst., at the Health Office, City Hall.

A METEOROLOGICAL SOCIETY.

An effort has been made in New York City to form a meteorological society, with what success we do not know. It would seem, however, that there are enough persons interested in the subject to insure the formation of a valuable organization, particularly if the effort was extended to adjoining cities.

It is believed that in addition to the few professional meteorologists now in and near the metropolis there are also many other men, physicians, civil engineers, teachers, lawyers, farmers, journalists, public officials, instrument makers and others, who are giving more or less attention to weather-science because of the relations existing between some branch thereof and their own several vocations. And it is not unreasonable to think that most, if not all, of this number would find it advantageous to affiliate for purposes of study and discussion.

The establishment of a library, to include standard books on meteorology, periodicals and reports devoted to kindred subjects, charts and other helps to investigation, would be one of the most important and useful features of such a scheme. Essays from members or outside experts, either upon current or newly-proposed theories in weather-science, or upon more practical matters like the relations of cold waves and humidity to health, or of rainfall to crops, forests to freshets, or floods and gales to some branch of engineering, would be sought and made the basis of discussion. No doubt, the more accomplished scholars among the members would derive some benefit from these facilities and the papers of their associates, while obvious advantages would accrue to those who were less versed in the mysteries of this infant science. Not least among the good results likely to proceed from the proposed organization would be the suppression or depreciation of "cranks," and the education of the public in correct notions and terminology. Unlike the excellent State Weather Services now in operation in twenty or thirty States of this country, the proposed association should be composed of persons who are, even if on a very modest scale, investigators rather than mere observers, and would not contemplate the issue of forecasts. It would more nearly resemble, in aim, the New England, Royal and Scottish Meteorological Societies, although on a smaller scale. Purely local at first, it might in time become the nucleus of a State or National association of dignity, repute and use.

BROOKLYN VITAL STATISTICS FOR MAY, 1890.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated April 1890, 859,612	The number of Births reported was.....	993
In the month of May there were 1366	The number of Marriages reported was.....	407
Deaths, the rate of mortality being 18.71 per 1000 of population.	The number of Still-births reported was.....	114

The Mortality, by classes and by certain of the more important diseases, was as follows:

Causes:

1. Zymotic.....	199	Malarial Diseases	12
2. Constitutional	272	Diarrhoeal Diseases (all ages)	14
3. Local.....	737	“ “ (under 5 years)	10
4. Developmental.....	117	Phthisis.....	166
5. Violence.....	41	Bronchitis.....	67
Measles.....	19	Pneumonia.....	172
Croup.....	28	All Respiratory.....	261
Diphtheria.....	77	Bright's Diseases.....	45
Scarlet Fever.....	7	Puerperal Diseases.....	15
Typhoid Fever.....	1	Old Age.....	23
Whooping Cough.....	12	Suicide.....	6
Cerebro Spinal Meningitis.....	6		

Reported Cases:

Diphtheria.....	209	Measles.....	418
Scarlet Fever.....	137	Typhoid Fever.....	24

Deaths, by sex, color, and social condition, were as follows:

Male.....	720	Native.....	917
Female.....	646	Foreign.....	449
White.....	1343	Married.....	400
Colored.....	23	Single.....	750
Widows, Widowers and not stated.....	216		

Still-births, excluded from list of deaths, were as follows:

Males.....	60	Total.....	114
Females.....	54		

Deaths in public institutions.....	109	Homicides.....	6
Deaths in tenement houses.....	378	Suicides.....	121
Inquest cases.....	121		

Age Periods:

Deaths under 1 year.....	287	Total deaths, 5 to 20.....	128
“ “ 5 years.....	219	“ “ 20 to 40.....	251
Total deaths under 5.....	506	“ “ 40 to 60.....	229
		“ “ 60 and upwards.....	252

Certain foreign and American cities show the following death-rates for the month of May, 1890:

Brooklyn.....	18.71	Vienna.....	24.12
New York.....	23.20	Paris.....	25.70
Philadelphia.....	19.88	London.....	18.40
Berlin.....	18.24	Glasgow.....	29.62
Dublin.....	24.50		

BROOKLYN VITAL STATISTICS FOR JUNE, 1890.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated July 1, 1890, 871,852	The number of births reported was	1017
In the month of June there were 1716 deaths, the rate of mortality being 24.29 per 1000 of population.	The number of marriages reported was	575
	The number of still-births reported was	106

The mortality by classes and by certain of the more important diseases was as follows:

Causes:

1. Zymotic	506	Malarial Diseases	13
2. Constitutional	280	Diarrhoeal Diseases (all ages)	283
3. Local	747	“ “ (under 5 years)	274
4. Developmental	120	Phthisis	159
5. Violence	63	Bronchitis	55
Measles	15	Pneumonia	124
Croup	18	All Respiratory	207
Diphtheria	96	Bright's Disease	43
Scarlet Fever	17	Puerperal Diseases	9
Typhoid Fever	11	Old Age	31
Whooping Cough	18	Suicide	11
Cerebro Spinal Meningitis	7		

Reported Cases:

Diphtheria	192	Measles	392
Scarlet Fever	107	Typhoid Fever	26

Deaths by sex, color, and social condition, were as follows.

Male	912	Native	1269
Female	804	Foreign	447
White	1682	Married	393
Colored	34	Single	1132
Widows, Widowers, and not stated	191		

Still-births, excluded from list of deaths, were as follows:

Males	56	Total	106
Females	50		
Deaths in public institutions	131	Homicides	1
Deaths in tenement houses	613	Suicides	11
Inquest cases	152		

Age Periods:

Deaths under 1 year	523	Total deaths, 5 to 20	125
“ “ 5 years	270	“ “ 20 to 40	255
Total deaths under 5	793	“ “ 40 to 60	237
		“ “ 60 and upwards	206

Certain foreign and American cities show the following death-rates for the month of June:

Brooklyn	24.29	Vienna	24.45
New York	25.48	Paris	22.47
Philadelphia	21.71	London	16.85
Berlin	26.45	Glasgow	25.90
Dublin	22.58		

BROOKLYN VITAL STATISTICS FOR JULY, 1890.

By J. S. YOUNG, M.D., Dep. Commissioner of Health.

Population, estimated July. 1, 1890, 871,852	The number of Births reported was	1138
In the month of July there were 2214 Deaths, the rate of mortality being 29.84 per 1000 of population.	The number of marriages reported was	442
	The number of Still-births reported was	120

The mortality by classes and by certain of the more important diseases were as follows:

Causes:

1. Zymotic.....	871	Malarial Diseases.....	13
2. Constitutional.....	343	Diarrhoeal Diseases(all ages).....	650
3. Local.....	800	“ “ (under 5 years).....	593
4. Developmental.....	133	Phthisis.....	157
5. Violence.....	67	Bronchitis.....	57
Measles.....	7	Pneumonia.....	75
Croup.....	20	All Respiratory.....	151
Diphtheria.....	72	Bright's Disease.....	38
Scarlet Fever.....	8	Puerperal Diseases.....	12
Typhoid Fever.....	17	Old Age.....	28
Whooping Cough.....	34	Suicide.....	7
Cerebro Spinal Meningitis.....	6		

Reported Cases:

Diphtheria.....	166	Measles.....	139
Scarlet Fever.....	60	Typhoid Fever.....	60

Deaths by sex, color, and social condition, were as follows:

Male.....	1147	Native.....	1740
Female.....	1067	Foreign.....	474
White.....	2161	Married.....	371
Colored.....	53	Single.....	1644
Widows, Widowers, and not stated.....	199		

Still-births, excluded from list of deaths, were as follows:

Males.....	60	Total.....	120
Females.....	60		
Deaths in public institutions.....	143	Homicides.....	1
Deaths in tenement houses.....	821	Suicides.....	7
Inquest cases.....	171		

Age Periods:

Deaths under 1 year.....	1020	Total deaths, 5 to 20.....	119
“ “ 5 years.....	344	“ “ 20 to 40.....	254
Total deaths under 5 years.....	1364	“ “ 40 to 60.....	246
		“ “ 60 and upwards.....	231

Certain foreign and American cities show the following death-rate for the month of July:

Brooklyn.....	26.47	Vienna.....	23.84
New York.....	30.88	Paris.....	20.32
Philadelphia.....	24.99	London.....	16.68
Berlin.....	22.52	Glasgow.....	24.50
Dublin.....	22.60		

THE
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ORIGINAL ARTICLES.

RAPID AND EASY METHODS OF ESTIMATING UREA AND SUGAR IN URINE.

BY E. H. BARTLEY, M.D.

Read before the Medical Society of the County of Kings, June 17, 1890.

It is probably unnecessary for me to insist here upon the importance of quantitative estimations of the daily excretion of urea as a measure of the functional power of the kidneys. In cases of renal disease the danger lies in the inability of these organs to eliminate from the blood certain nitrogenous elements of retrograde metamorphosis, which, in health, they discharge into the urine in the form of urea. Heretofore the busy practitioner has regarded the estimation of urea and sugar as processes only for the chemist. It is my purpose to bring to your notice easier and simpler methods, and simplified apparatus, for these estimations. The apparatus for the estimation of urea consists of two parts :

1. A pipette with one graduation, and marked 1 c. c.
2. A graduated tube about 1 c. c. in diameter and about 30 c. long, and closed at one end.

The process depends upon the well-known decomposition of urea by a solution of hypobromite of sodium, with the production of nitrogen, carbonic dioxide, and water. The two latter bodies remain

dissolved in the solution, while the nitrogen escapes. The measure of the nitrogen is depended upon to calculate the weight of urea which produced it.

The books direct the hypobromite to be prepared freshly, from 100 grms. of caustic soda, and 25 c. c. of bromine in 250 c. c. of water. Bromine is a very disagreeable and even dangerous liquid to handle, and the process is tedious. Instead of this, I use two solutions, and mix them when used. These are a twenty per cent. solution of potass. bromide and Labaraque's solution of hypochlorite of soda, which when mixed produce the hypobromite of soda and chloride of potassium. These reagents may be found in every drug-store.

The process is performed as follows: The graduated ureometer is filled to the sixth mark with the solution of potass. bromide, then to about the fifteenth mark with Labaraque's solution, and finally to about the twentieth with water. With the pipette deliver into the water the 1 c. c. of urine, and close the open end of the ureometer with the thumb of the right hand, holding the tube firmly. The ureometer is now inverted a few times to mix the contents thoroughly. When effervescence ceases the height of the liquid in the inverted tube is noted; the open end is then plunged into a vessel of water, the thumb removed, the tube is lowered until the surface of the water within and without the tube are on the same level, and another reading taken. The difference between the two readings gives at once the number of grains of urea in each fluid ounce of the urine under examination.

The graduations of the instrument represent grains per fluid ounce when 1 c. c. of urine is taken. The time required for an estimation is about five minutes, and no especial skill is needed. The instrument may be had of Eimer & Amend, of New York.

ESTIMATION OF SUGAR.—For the estimation of sugar, the solution used is Fehling's solution, with the addition of a small quantity of potass. ferrocyanide (yellow prussiate of potash), which is added to prevent the precipitation of the red oxide of copper. By this procedure (for which we are indebted to Causse, "*Bulletin de la Société de Chem.*," 1889, p. 625) we are better able to see the discharge of the blue color of the copper solution. The apparatus consists of a short burette, terminating in a comparatively wide delivery-tube, beveled at the end. The delivery-tube of the burette passes through a cork in the neck of a flat-bottom flask of about four ounces capacity. Another tube, bent at right angle, passes through the same cork, for the escape of steam, during the boiling. The burette is graduated in c. c. and also with a second graduation, representing grains per fluid ounces, when 5 c. c. of Fehling's solution are taken.

The process is performed as follows: Fehling's solution is poured

into the burette until it is filled exactly to the 5 c. c. mark, which on the burette is marked F. A 1 to 20 solution of potassium ferrocyanide is added until the 7 c. c. mark is reached.

The stop-cock is now opened and the liquid allowed to run into the flask. The burette is filled with water, and this is allowed to flow into the flask. The apparatus is now put upon a sand-bath, or other source of heat, and allowed to come to a boil. The burette is now filled to the zero mark with the urine to be examined, and added carefully until the blue color of the solution in the flask is discharged. The exact point is easily seen. It is only necessary to read off the grains of sugar per fluid ounce on the left-hand graduations.

In most cases of diabetes it will be necessary to dilute the urine to about 5 grains per ounce after a preliminary test. This is easily done in the burette. We may simplify the preparation of the solution by adopting the following formula for the preparation of Fehling's solution, which is now usually made in two parts and mixed when needed for use :

SOLUTION No. 1.

Copper sulphate..... 34.65 c. c.
Dist. water..... 500.00 “

SOLUTION No. 2.

Rochelle salt..... 1.73 c. c.
Caustic soda..... 200.00 “
Potass. ferrocyanide... 50.00 “
Water..... 500.00 “

For use, mix equal quantities of these two solutions, measured out with the burette. I have had but a few months' experience with the keeping power of Solution No. 2; but, so far as I have tested it, there is no reason for not adopting this formula.

NOTE.—Dr. Squibb's "Solution of Chlorinated Soda" answers admirably.

NOTE ON EPISIOTOMY.

BY CHAS. JEWETT, M.D.

Read before the Medical Society of the County of Kings, June 17, 1890.

According to Olshausen perineal lacerations are unavoidable in fifteen per cent. of primiparæ without episiotomy. This may be taken as the extreme limit attainable in skilled hands. In general obstetric practice the proportion is certainly not less than 20 to 30 per cent. and that, too, of tears sufficient to impair in greater or less degree the function of the pelvic floor. On *a priori* grounds alone, then, the operation

of episiotomy is entitled to hold a more prominent place in the obstetric procedure than is accorded it by most writers. Owing in part to the feeble endorsement it has received at the hands of obstetric authors this measure is almost wholly neglected by practitioners. The majority of physicians I undertake to say have never performed it at all. Another reason why it has not received more attention is to be found in the fact that a laceration is generally looked upon as capable of causing no more damage to the pelvic floor than is done by the incision and it is believed that it may be quite as easily repaired. The fact is, however, that a laceration of the perineum is frequently, I may say usually, a by far more complex lesion than a simple separation of the structures in a single plane. It is oftener a sundering of the fasciæ and the muscular structures in several planes. It follows therefore that the restoration of the perineum to its original integrity after a laceration is a by no means simple operation.

A greater or less degree of relaxation of the pelvic floor with a corresponding gaping of the introitus is a too common result of suture even by expert operators. The incision on the other hand divides the structures in a single place and permits an easy and complete restoration of the parts.

Even should the incision be extended by a tear or should lacerations take place at other points the repair is still materially simplified and the result more satisfactory than would have been possible without episiotomy. The argument that incision adds to the danger of sepsis does not hold in aseptic practice, and in the event of septic exposure a complicated laceration is more favorable to absorption than a clean cut incision. From these considerations I have been led to make more frequent use of episiotomy for the prevention of perineal tears, and the results in my experience have borne out my expectations. I have not always succeeded in wholly preventing lacerations nor have I succeeded in restoring the perineum in all cases to its primitive integrity, yet in no case have I had reason to regret the incision and in none have I failed of a better repair than could have been reasonably expected without the incisions. Increased experience, too, I am sure, adds increased value to the procedure. It is not called for for the prevention of slight tears; but in any case when the laceration is likely to extend beyond the first degree the incision is better than the tear. I have been frequently struck with the depth and solidity of the perineal body after a typical episiotomy which had been sutured and healed. The tonicity of the pelvic floor is in marked contrast with that which usually follows the immediate suture of a deeply lacerated perineum.

My method is briefly as follows: The instrument I have used is a blunt pointed tenotomy knife. Any good blunt pointed bistoury,

however, answers the purpose. The knife is passed flatwise alongside the head, its cutting edge turned outward and the incision carried to the required depth. Much depends on properly timing the operation. In many cases it will be found possible to wholly anticipate the tear. Yet the incision should by no means be omitted because a laceration has already commenced where the tear is certain to become extensive without interference. The incision is always best made during a pain while the resisting ring is rendered tense by the pressure of the head. The exact situation of the resisting girdle is more easily determined and the cut is more easily made at this time. Placing the index finger of the free hand just within the introitus as the head is forced down by the pain the cord-like girdle is readily felt and it is this only which should be divided. The point of division should be about one-fourth way from the perineal raphe to the clitoris. This in the distended condition of the parts during a pain is sufficiently far back to avoid injury to the duct of the vulvo-vaginal gland. The incision should be practised on both sides. The depth of the cut need not usually exceed a quarter or third of an inch in the stretched condition of the parts. Its direction should be at right angles with the girdle of resistance at the point cut. It may extend down to the skin but need not invade it, and may be about three-fourths of an inch in length. While various other methods of incision have been suggested and practised the foregoing seems the simplest and the most effectual. Cohen's subcutaneous tenotomy of the bulbo-cavernosus is painful, is liable to injure the corpora cavernosa and moreover does not accomplish the purpose. Nor can I see any advantage in the multiple incisions of Schultze and others over the single division of the ring on each side. Tarnier recommends an incision of the perineum beginning in the median line and passing obliquely to one side, but this divides more important structures than the method adopted and affords no more relief to the over-distention. Pallen's method of cutting above the ducts of Bartholin is liable, as Garrigues remarks, to wound the vaginal bulbs. Garrigues prefers blunt scissors to the knife as more efficiently accomplishing just the object aimed at, cutting neither too much nor too little. The objection to the scissors is the difficulty of using them during a pain. Such at least has been my experience. At the close of labor the incisions as well as lacerations that may have occurred in spite of the incisions should be invariably closed with sutures. For this purpose I prefer catgut prepared under the supervision of the surgeon himself.

With an aseptic management of the labor and the suture and the use of a suitable antiseptic vulvar dressing during the post-partum week union is practically assured.

THE HEART IN DIPHTHERITIC PARALYSIS, WITH REPORT OF A CASE.

BY HENRY CONKLING, M.D.,

Pathologist and Assitant Visiting Physician to St. Peter's Hospital; Physician to the Department of
the Chest, Brooklyn City Dispensary.

Read before the Medical Society of the County of Kings, June 17, 1890.

Your attention is asked to certain observations upon diphtheritic paralysis, with especial notes upon the condition of the heart in that disease, from a case that has been lately recorded, the cardiac condition of which may be taken as typical of true diphtheritic paralysis. The manifestations of this particular case have been, in part, in accord with certain others that have been observed and studied in hospital work.

It is an interesting fact in the clinical study of disease that the manifestations of the sequelæ of acute affections are sometimes slow in showing themselves by symptoms. This is true even in those cases where the changes are marked by destruction or disorganization of tissue. Functional disturbances distinct from the disease itself, are common in acute affections, where inflammation, limited to one organ, or one set of organs, marks the primary disease. These functional disturbances rarely are of sufficient importance to be called complications. But during the period of convalescence, when the process of natural repair is going on, muscular, nervous, or organic changes may be taking place, in parts remote from the seat of the primary disease. These sequelæ do not always bear a distinct relation in their gravity to the original disease which may be taken as their exciting cause. This fact, taken with the manner of their manifestations, frequently causes them to be regarded as of slight importance. This view is sometimes expressed in relation to diphtheritic paralysis. It is also frequently stated that strychnia or some of its preparations are specifics in its cure. Both of these statements are open to criticism.

Opportunity was given some time since to study, in hospital work, clinically and pathologically, a number of cases of diphtheritic paralysis. The conclusion was drawn—almost forced upon one's mind—that the disease was of a most serious nature. Since that time additional opportunities have been given to watch and to treat similar cases. Further deductions have been drawn, with especial attention to certain symptoms and signs, with observations upon particular lines of treatment.

The exact pathological lesion is not perfectly ascertained. It is perhaps in keeping with the nervous changes of degeneration and loss

of substance, where a similarity in lesion produces at times a difference in manifestations. A certain change in the motor cells of the cord, medulla, and cardiac ganglia—a granular condition—may be present. There may be a condition of inflammation, causing swelling; or an irritation, causing an opposite condition of decrease in size. Nutritive change will always produce change in function, and the motive power of nerves, dependent upon nutrition from great centres, is sometimes imperfect without any marked change in the nerve trunks themselves.

A considerable part of an active hospital service has been given lately to the study of cardiac conditions, and the case to be reported is in keeping with these observations.

In the 9th of November, 1889, a young lad aged fourteen was admitted into the wards of my chief at St. Peter's Hospital in this city. The patient had had in September an attack of diphtheria, from which he had recovered. In October he had suffered from a second attack. Convalescence began promptly, but the lad remained in a somewhat weakened condition. His usual strength and activity were not wholly regained. He was easily tired. He grew steadily worse, and his parents at this time were told by a physician that he was suffering from "general debility, with a tendency to consumption." On the 8th day of November he was admitted to the hospital, the journey to which had considerably fatigued him. After a sufficient period for rest, the examination was made.

This found a rather pale lad, somewhat but, not extremely, emaciated; he could stand with difficulty; it was impossible for him to walk; the use of the arms was impaired; there was very little feeling on the left side, but more on the right. He had naturally a high palate; there was paralysis of the soft palate; the line of demarcation between hard and soft palates could not be seen upon deep inspiration; the posterior faucial wall was thickened; the pharyngeal wall was slightly glazed; the voice was of a peculiar high-pitched character; swallowing was painful and difficult.

The tongue was slightly coated, and the membrane of the mouth and lips, with that of the conjunctivæ somewhat pale. There were no abnormal conditions in the eyes.

The urine contained a small amount of phosphates. There was no paralysis of bladder or rectum. The reflexes were present, with the exception of the ankle clonus and the scapular reflex. Some were more marked than others. The lungs were normal and healthy. There was no indication of pulmonary consumption. There was nothing to cause alarm in the working of the diaphragm. But the condition which to the patient was the most important, and which in the examination was the most interesting, was that of the heart.

Inspection showed nothing.

Palpation gave feebleness of apical impulse.

Percussion showed slight diminution in area of cardiac dulness; the sense of resistance seemed to be somewhat lessened.

Auscultation found the first and second sounds faint at the base. There was an undulating sound at the apex; the interval between the first and second sounds was very materially lessened; the clear valvular element of the sounds was wanting; the rebound was imperfect. Now and again there was a tendency to a condition of tremor cordis. But the sphygmograph gave information quite as important as that derived from the associated methods of physical examination. There was certainly a heart, the nervous control of which was not perfect. By the sphygmograph were learned the manifestations of the nervous irritability and the condition of the muscular fibre. Three ounces pressure was used. The tracing showed a short wave of ascent, a rounded summit, a long tidal wave, scarcely any aortic notch, a long diastole, and then, what is always indicative of depression, a dip in the needle before the next line of ascent.

This was the case. It was evident at the time of the examination that the heart was the organ which must be constantly watched, and to the improvement of which all treatment must be directed. It was also evident that this treatment must be given through the nervous system. There were two indications:

1. Cardiac nutrition.
2. Cardiac stimulation.

The condition in the throat excited no alarm. The loss of power in the limbs was of secondary importance. There was danger of the heart stopping in diastole.

The boy was put to bed and kept in the recumbent position. After preparation he was fed with nutritive and stimulating enemata; from time to time the best of all nerve medicines—olive oil—was dropped upon his tongue. General and local faradization was commenced, and continued with an increasing current.

In a few days the throat began to regain its function; sensation began to return throughout the body. The enemata were continued in decreasing number, until the swallowing was perfect.

The patient was fed with the best of food in large amounts, with aids to digestion. A very liberal supply of whiskey was given—always with the food, never alone.

The simple bitters and a preparation of iron were given. Maltine and cod-liver oil were substituted for the olive oil.

The electricity was continued.

During this period daily examinations were made of the heart.

The patient was still kept in bed in the recumbent position. His strength increased. At first powerless to arrange his clothes for the battery, he could, little by little, help himself more and more.

Some time elapsed before there was any marked change in the condition of the heart, but it slowly gained strength and tone. Finally, when there was the heart of *sustained stimulation*, it was evident that the patient was out of danger. The apical impulse was then well felt, there was a more resisting feel upon percussion; the sounds were distinct and clear; the rhythm was uninterrupted; the recoil was well marked. Then the tracing showed a most marked improvement. There was a vigorous line of ascent, a sharp summit, a short tidal wave, a well-marked aortic notch, and an absence of the dip.

The heart was, therefore, restored to strength and function. There was no fear of that. The patient was then told to get up. Without assistance he would have fallen.

Electric massage for the lower extremities was then commenced, still using the interrupted current.

Each day with support the patient walked.

Each day his support grew less.

On December 12th he could walk by pushing a chair in front of him. His gait, when alone, resembled the walk of a patient with pseudo-hypertrophic paralysis. It gradually became normal, and eleven days before his discharge the patient did light work about the ward.

Upon dismissal the heart was in strong condition. The symptoms and signs mentioned above, as found upon the first examination, were absent, and, with strength and organic function recovered, the patient was in a condition to continue his gain of weight and maintain his strength.

In diphtheritic paralysis the most important clinical change is in the heart. The changes in nerve nutrition produce changed functional activity. From clinical study and observation the statement is here given that mere local paralyses of the throat after diphtheria are comparatively unimportant and bear but little relation to a grave condition. Indeed it may further be stated that, should a case present paralysis of the throat, with dysphagia, even to the extent of regurgitation, and no abnormal cardiac or diaphragmatic condition could be found, the case would be one in which the hope of speedy recovery could be entertained with perfect justice. There have been in Brooklyn during the past winter a large number of cases of tonsillitis—some rheumatic, some simple in character. In observations upon a number of cases, there has been noticed a tendency for hypertrophy of the posterior faucial wall to remain after the acute disease. Slight modifications of

function were sometimes present in these cases, due to the local change, which sometimes would become chronic and require treatment, and again would disappear of itself. The frequent association of local throat troubles with many cases of true diphtheritic paralysis does not weaken the strength of the hypothesis given above, for the reason that, so important has the local condition been considered that the constitutional state has been entirely overlooked. Cardiac signs are sometimes present without any marked symptoms. We are continually reading and continually hearing of cases of sudden death in diphtheritic convalescents. There must be a cause of death in all of these patients.

The peculiar condition of the heart in diphtheritic paralysis, of which the case recorded this evening is such a perfect illustration, is here regarded as secondary to and dependent upon nervous change, and not due to primary muscular change. The basis upon which this statement is made is the result of a number of observations upon organic conditions in convalescent patients. It has been my practice for some time past to observe and examine patients in the wards of St. Peter's Hospital, who were recovering from acute diseases, such as enteric fever, dysentery, severe enteritis, capillary bronchitis, rheumatic fever, nephritis (a primary attack), or other acute affections. The results of the examination of the heart are sufficient for our purpose here. It will be found in an asthenic condition, with weakening of its muscular fibres and occasionally dilatation. No nervous irritability, no irregularity was found. The sphygmograph never showed the so-called pulsus bigeminus, but gave a uniformity of results in a somewhat slow pulse with a tendency to retardation of systole. The records were made day by day and carefully noted. Day by day showed gain in strength and force. Excitement of any kind rarely manifested itself, and the gain in cardiac muscular strength corresponded with gain in strength throughout the body. But the clinical history of the case of diphtheritic paralysis presented no such uniformity. The heart of the morning was not the heart of the afternoon. The action of the heart, before and after eating, with stomach empty or full, was different. Visiting-day in the hospital always caused some excitement, and the utmost care and attention were necessary for the first week or ten days, at the end of which the heart first began to markedly improve. The line of stimulating electric treatment always produced increased nervous activity, but never depression, and the "stuffing" diet of the patient was always to aid in storing up more than the waste of retrograde products.

Extreme muscular debility of the heart cannot always be repaired by treatment. Cases may linger for a long time, but improvement to any extent is rare.

Heart cases in which nervous disturbance is the primary factor are always more threatening at the time of severe nervous exhaustion, but, on the other hand, they very frequently respond quite effectually to treatment.

The symptoms and signs then of the heart in diphtheritic paralysis are not those of advanced muscular degeneration, for the heart is the strongest organ in the body. The manifestations of weakness and debility must have the element of time in their production. By the strength of the muscular fibre of the heart, its functional activity is long continued and death in acute diseases, with certain exceptions, coming at some period during the first week, is rarely due to conditions of asthenia or syncope. The conditions of diphtheritic paralysis come after the primary acute disease has entirely subsided. A period of from three to six weeks may elapse, during which time certain changes are taking place. The patient is easily fatigued, and circulatory disturbances in a few and nervous disturbances in many cases are present.

The organic changes in nervous structure, with certain exceptions, are slow in their formation. These changes of diphtheritic paralysis in nervous structure produce cardiac irritability; lack of nutrition produces a series of signs similar to those which the case of this evening has presented.

To strengthen yet again the view advanced as to the origin of the cardiac condition here considered, the statement is made that the heart of acute diphtheria is not the heart of diphtheritic paralysis. And again, that death coming in either disease, should it be from the heart, there will be found upon post-mortem examination a dissimilarity in cardiac appearances and conditions. Abnormal conditions in various organs may account for death in diphtheria. If the heart is at fault, it forms one of the exceptions referred to above when speaking of cardiac muscular change.

There is but one morbid condition which will produce, with great rapidity, extreme muscular debility. This is septicæmia, including under the term poisons of all kinds, whether they be from without or auto-infection. To explain the exact meaning of this view the results of a series of post-mortem examinations is here given. There have been in St. Peter's Hospital during the last few months a number of cases of acute inflammations of the kidneys upon chronically diseased kidneys. Cases of this kind have entered during every stage of the disease—the commencement of the attack, during its continuance, or the cases found unconscious and brought by the ambulance surgeons to the hospital. If recovery or improvement take place the changes are slow. Death has resulted in from forty-eight hours to five days.

The post-mortem examinations show changes due to infection, the poison coming from the non-elimination of urinary products. A recent post-mortem examination showed, in part, hæmorrhagic pleurisy, pericarditis, intense staining of the pulmonary artery, the aorta, and all the valves, pulmonary œdema, destruction of the heart fibre, the tissue being soft and pulpy, with dilatation of and thrombi in the cardiac veins. All of this in a heart weighing fourteen ounces, with well dilated but not rigid coronary arteries and with a left supplemental coronary artery. Every evidence was present that cardiac nutrition had gone on well, notwithstanding chronic parenchymatous nephritis. Congestion, with kidneys weighing eight and a half and seven and a half ounces marked the acute disease. In other examinations, where auto-infection has been present, the blood has shown corpuscular degeneration. There are cases of septic poisoning in diphtheria where similar cardiac conditions are found.

It is of course necessary, in seeking for anatomical changes, to recollect the nervous supply of the heart. Theoretically it is important, as it aids in the employment of the electricity.

While the action of the heart in diphtheritic paralysis favors central change, the possibility of changes in the nerve-trunks must be considered. The disease is, however, without fever. The clinical history does not present the same features which severe neuritis would produce in heart-action. The location and the formation of the lesion embrace the interesting and important subject of the formation of nervous lesion in general.

The nervous supply of the pneumogastric, the sympathetic, the cardiac ganglia, afferent and efferent nerves, inhibitory fibres, primary and secondary reflex fibres must all be considered.

From the case presented this evening there are two deductions. The first: Recognizing a disease of a certain lesion, we will aid in removing from medical nomenclature the senseless, the wholly without meaning, term of "heart failure." Increasing by one the number of recognized diseases, and so adding to the classifications, we will aid in defining the causes of death by the use of scientific terms in a scientific manner. Respiratory failure—cerebral failure would be quite as proper as the term being condemned. It, in itself, means nothing. It is a result. It is never a cause. Patients never die of it alone. Organic change only can produce failure of the contracting muscular force of the heart. In every case this may be found. There may be capillary fibrotic changes away from the heart, venous changes, coronary arterial changes, muscular degenerations, or nervous changes. These are causes, and the effect never comes without the cause.

The second: Recollecting that diphtheritic paralysis comes from

cases mild or severe, to carefully examine, all through convalescence, the heart by the five associated methods of physical examination, with other aids when practicable. At the first indication of nervous irritability to commence treatment.

In diphtheritic paralysis all medicines are of little avail. Cases in which strychnia has been used have done no better than those in which the drug was not employed. There are three indications :

1. Absolute rest.
2. The best of food, given in the manner which the case requires, with careful attention to the entire digestive tract.
3. The use of electricity.

Electricity furnishes in this disease an agent which in action is prompt and certain; in results permanent and curative. Its use is an aid in diagnosis. The line of demarcation in heart cases between muscular change and those cases in which nervous disturbance is the primary factor may be drawn in two ways :

1. By symptoms and signs.
2. By the effects of treatment.

The first has already been spoken of. The second is the concluding argument relating to the heart of diphtheritic paralysis as here described. In all cases marked by cardiac depression, electricity will be either stimulating and sustaining or will increase the degree of depression. By the use of central galvanization or general faradization, the power of the heart may be increased if the muscular fibre be not degenerated. Through the nervous system the muscular fibre, cardiac and vascular, is brought into increased activity. This may be illustrated by referring to a series of cases in which electricity was used to meet certain indications. Before giving the electricity the heart was examined and then a tracing taken of the pulse with the sphygmograph. The results I obtained were these :

The holding of the electrodes in the hands will not affect cardiac action.

Directly or indirectly the cardiac ganglia or the cardiac nervous supply must be brought into action.

Action on the solar plexus is sufficient.

Action on the spinal nerves is sufficient.

By the electricity the heart-action is increased. The tracings showed :

1. More vigorous contraction by higher line of ascent.
2. More vigorous contraction by a delayed tidal wave.
3. Higher tension by a delayed tidal wave.
4. A correction of certain manifestations of weakness.

All of which changes come from contraction of the muscular struc-

ture in the arterial coats being the result of the "passage" of the muscle from "rest into action"—a condition of electrical "discharge." Perfectly normal hearts were thus stimulated, as well as those suffering from depression. But in all cases where there was *great muscular depression, no stimulation resulted*, but rather a further depression. From which it can readily be seen that the heart of convalescence, from the diseases mentioned in the paper, would not be benefited by electricity. But the case here reported improved by its use to a great degree. *If the exciting poison had produced great muscular change, the electricity would have done harm instead of good.* But believing that the heart of diphtheritic paralysis was not one of primary muscular change, the electrical stimulation was used early in the treatment of the case with the results already mentioned. In studying the history of this particular case, I have no doubt that the continuous current would have produced similar results. But the faradic was used at the commencement of the treatment, and for the sake of uniformity its use was continued throughout.

An important question may here be asked. Are there any special or particular lines of treatment which will aid in preventing the paralysis?

Diphtheritic paralysis, then, is a disease of the utmost gravity. It has a certain anatomical lesion, the manifestations of which the neurologists are beginning to recognize, and the nature of which they are commencing to investigate. That such is the case we have had in this room, only a few meetings since, testimony of the highest possible value, in the paper on the "Pathological Processes in the Nervous System," presented by Dr. Landon Carter Gray, in which the author mentioned, quite incidentally, it is true, but still in which he mentioned the changes produced in the nervous system by what he termed the diphtheritic virus.



SOME EXPERIENCES IN THE OPERATIVE TREATMENT OF CARCINOMA OF THE BREAST.

BY GEO. RYERSON FOWLER, M D.,

Surgeon to St. Mary's and the Methodist Episcopal Hospital, Brooklyn, N. Y.

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During an experience of nearly nineteen years of surgical practice there have come under my observation upward of 100 cases of carcinoma of the breast, the histories of 64 of which are more or less complete. Of these no less than 10 have presented themselves to me with the

disease so far advanced that operative interference was considered unjustifiable. Of the inoperable cases, 1 was a case in which the disease had extended to the pleura; 6 involved the chest-wall, extending to the supra-clavicular region and involving the pectoralis major muscle, as well as its underlying lymphatic glands; while 3 were refused operation because of the advanced cachexia, and exhausted condition from extensive ulceration, prolonged discharge and frequent hæmorrhage. Of the 6 cases, in which extensive involvement of the chest-wall existed, 2 were denied the advantages of even the slight chance which interference might offer by the occurrence of secondary deposits in or coexistence of carcinoma of the abdominal viscera. In one of these, carcinoma of the stomach was reasonably certain to be present; in another, hepatic carcinoma was suspected; and in a third case, pleural and pneumonic involvement was present. The case of so-called metastasis to the lung and pleura coexisted with extensive involvement of the chest-wall; it is more than probable that the intra-thoracic structures were attacked by direct infection through neighborhood rather than a true metastasis. It is a sad commentary upon the intelligence of the practitioners under whose care 4 of these 10 cases came that the patients were informed by their medical attendant that the growth was of an innocent character and would never give rise to any inconvenience. Relying upon this, one of these fell a victim to intra-thoracic cancer, and the remaining 3 to advanced cachexia, hæmorrhage, and consequent exhaustion. Upon the patients themselves, in 6 cases, rested the responsibility of a failure to appreciate the gravity of the situation, inasmuch as 4 failed to seek advice until the disease was far advanced, and the remaining 2 refused to credit the statement of their attendants that their malady was of so serious a character.

Of these 64 cases, all were females. I have never met with cancer of the breast in a male. The average age is shown by my notes to have been 51.4 years, the youngest being 22 and the oldest 67.

The cases were distributed, as regards the periods of life, as follows: 23 occurred during the period of active menstruation or child-bearing, from the 22d to the 45th year; 27 occurred during the climacteric, from 45 to 55; during the period of extinguished sexual life, after the 55th year, 15 were noted.

Deducting the 10 cases considered inoperable, of the remaining 54, 6 declined operation. The number still remaining and operated upon leaves the average age about the same as that of the entire number observed, viz., 51 years and 6 months.

Of the total number observed but 3 were unmarried women, and of these I have reason to believe that 2 were virgins. Perhaps the third one should be classed among those whose sexual organs had undergone

the changes incident to the married condition. She confessed to at least two abortions, prior to the third month of pregnancy, although she declared that she had never borne a living child. 40 had borne children; the histories of 30 show that of these, 19 had borne 5 or more children and 11 had borne more than two. This last does not include one case in which but one conception took place, the result being twins. Of the remaining 24 noted as not having borne living children, 18 had had one or more abortions, while the remaining 6 were sterile. Of 30 who had borne children, 21 had nursed them at the breast; 16 had nursed more than five children. Of the 9 classified among those who had not nursed their children, 3 had failed to do so from choice, while 4 attempted to do so but were prevented in 3 cases by the occurrence of fissured nipples; of the remaining 2 cases, in one the physiological activity of both glands remained latent through three pregnancies, and in the other a double mastitis after the first labor prevented lactation; the patient shortly thereafter became a widow and remained so up to the time of coming under observation.

Of the 30 histories, in 2 the patients had been compelled to nurse their children from but one breast. The reason assigned, in both instances, was the occurrence of acute suppurative mastitis in the same breast, in four consecutive pregnancies in one instance, and in three in the other, the remaining breast being depended upon solely to nurse the subsequent children. In both of these cases the breast which had undergone the greatest functional activity—*i. e.*, the breast from which all the children were nursed—was the one attacked by the disease.

13 of the number of cases coming under observation, or more than one-fifth, gave a distinct history of acute inflammatory conditions in the breast preceding the disease; 43 gave a history of fissured nipples. The length of time intervening between the occurrence of mastitis and the development of the carcinomatous nodule, in 20 cases, varied from 11 months to 28 years. In 8 cases out of the entire number (64) the patients attributed the occurrence of the disease to the infliction of traumatism, and in 3 a history of injury was elicited by questioning upon this point. In all of these cases the disease made its appearance within a year following the injury.

Pagat's eczema of the nipple preceded the appearance of the nodule in 2 cases, the period of time intervening between the eczema and the carcinoma being four and eighteen months respectively. One of these cases occurred in an unmarried woman, and the other in a woman who had nursed three children.

In 10 cases a distinct history of heredity was obtained. In 2 cases nothing could be learned of the family history. In the remaining cases the result of inquiry upon this point was distinctly negative.

The two breasts were attacked with about equal frequency. The upper and outer segment of the breast was found to be the site of the disease in 30 of the 50 cases in which this point was noted.

Retraction of the nipple or dimpling of the skin overlying the nodule, showing decided involvement of the super-adjacent structures, was observed in 16 out of 30 cases. The period of time intervening between the noticeable appearance of the disease in these cases and the skin involvement, at the earliest was eight months and at the latest three and a half years.

Ulceration of the integument had occurred in 14 of the 64 cases; 10 of these were deemed inoperable. The earliest occurrence of ulceration in 30 cases was ten months following the discovery of the nodule; the latest one and a half years.

In 34 of the 60 cases, axillary lymphatic infection was made out. These included the 10 inoperable cases. Of the 45 cases operated upon, 3 were found upon opening up along the line of the pectoralis muscle and into the axilla, to trace lymphatic glandular involvement not before suspected or made out. The time elapsing between the discovery of the existence of the disease and the demonstrable lymphatic induration varied from six and a half months to a year. Dividing the gland into two lateral halves by an imaginary line drawn vertically through the nipple, in the 30 cases above referred to, it was found that, on an average, the lymphatic involvement occurred about three and a half months earlier where the tumor occupied the outer half of the gland. No definite importance could be attached to the occurrence of the growth in the upper as compared with the lower half of this segment of the gland, in its relation to axillary infection. Immobility, to a greater or less extent, or rather a lessened mobility as compared to the other breast, was observed in 13 out of the 20 operated cases in which lymphatic infection was demonstrated prior to operation; 4 other operated cases likewise presented this objective symptom, comparative immobility of the breast without demonstrable axillary lymphatic infection existing.

In the 45 cases in which operative interference was carried out, the method of procedure invariably consisted in typical amputation of the breast. In 36 of the series, opening up along the line of the pectoral muscle and into the axilla was added to the amputation, constituting what may be called the complete operation. In one case—not included in this study because of the fact that too short a time has elapsed since the operation to consider its history as complete—the axillary artery and vein were both involved in the diseased lymphatic glands, and two and a half inches of these vessels were removed with the mass. In another case the artery was accidentally wounded, and simultaneous

ligature of the artery and vein practised. No untoward disturbance occurred as a result of this in either case.

In clearing out the axilla, every trace of lymphatic glandular tissue accessible and capable of identification was removed, whether apparently involved in the disease or not. In the entire number operated upon but a single case was observed in which the supra-clavicular fossa was invaded by the disease. The infra-clavicular space was attacked in 4 cases. In 10 of the cases operated upon in my earlier experience, the axilla was opened up and cleared, because of the palpable existence of glandular infiltration. In 5 of the 36 cases in which the complete operation was performed, the edge of the pectoral muscle was found to be involved in the disease and removed. In these latter cases the average time, from the commencement of the symptoms until the time of operation, was eleven and a half months.

As to the immediate results of the operation: in no case was a fatal issue clearly traceable to the interference.

Of 29 of the patients whose histories have been traced up to the 3d year, operations for recurrence have been performed in 5 instances. In addition to these, 2 cases have come under my care, of recurrence, which had been operated upon by other surgeons. Of these 7 cases, 6 had not had the axilla cleared; and of the 5 operated upon by myself, and whose early condition I am familiar with, 4 had retraction of the nipple or other evidences of the involvement of the skin, as well as some degree of fixation of the gland to the underlying structures. The average time of recurrence was a fraction less than eight months. The latest recurrence in those coming under notice for operation the second time was one year and eight months, and the earliest was three months. Of the entire 29 cases, with complete histories (and no case occurring during the last two years is here included), 4 are known to be still living with no evidence of recurrence; three, four, five and a half, and ten years have elapsed respectively in these cases. In but 1 of these (the one now three years old) was clearing of the axilla omitted. In the one four years old, the gland was almost immovable upon the underlying structures, and portions of the muscular structures as well as the pectoral fascia were dissected away. In the case now five and a half years old, a local recurrence took place at the end of three months, which was promptly removed. Of the other 4 cases operated upon for recurrence, 2 are known to have since perished from the disease, and the remaining 2 I have been unable to trace.

If the cases not operated upon and of which I have knowledge be added to the inoperable cases, 15 cases may be said to have pursued an uninterrupted course to a fatal termination. The average length of time which these patients lived after the outset of the disease was a year

and five months. Of the 29 patients who can be traced beyond the third year following the operation, 1 has since died of carcinoma of the liver, 1 has been lost sight of, and, as before stated, 4 are known to be still living and in the enjoyment of good health. Of the remaining 23, 4 suffered recurrence within 6 months of a character to preclude further interference; 2 were operated upon a second time, and died within a year thereafter; 5 of the 29 were lost sight of after the third year; thus leaving 20 patients who had been operated upon and were known to have subsequently died either from the local disease or from a carcinomatous affection elsewhere. In this series of 20 cases the average duration of life was two years and four months from the commencement of the disease.

Of the 45 cases operated upon, 21 were medullary carcinoma and 24 were fibrous carcinoma or scirrhous, the diagnosis being based upon macroscopical appearances.

Time will not permit me to review the entire histories of these cases. There are many points of interest connected therewith, but to a few of the more practical of these I will call attention. In the first place, it would seem that the assertion of Sprengel is borne out, that increased rather than diminished physiological activity of the gland predisposes to the disease. The proportion of cases among those who nursed 5 or more children is very striking. Again, it is shown that where, from any cause, but one breast had been made use of for purposes of lactation, this had been the one attacked. The period of life at which the disease occurred is somewhat at variance with this, however, as more cases were observed during the climacteric than during the period of active menstruation or child-bearing. The former, however, included a majority of the unmarried cases, but one occurring in early menstrual life among the latter.

The relation which both acute inflammatory conditions as well as traumatism bears to the development of the disease is somewhat suggestive, as supporting the theory advanced by Gussenbauer, that carcinoma is analogous to tuberculosis in that the infection may make its way into the system through various channels of ingress and find the conditions necessary or at least favorable for its development at the site of former exudations, or more recent injury.

The cases of eczema preceding the disease may, according to Paget, bear some relation to the development of the disease. I may say, in passing, that I have observed another case of eczema of the nipple and areola in a married woman who had nursed 5 children. Three attacks have occurred in 8 years, all of them exceedingly obstinate; yet no development of carcinoma has taken place.

The fact that a much larger number failed to give a hereditary his-

tory of cancer than from whom such a history could be obtained, bears out the views advanced by surgeons upon this point during the last decade.

The fact that a greater proportion of the cases in which this point was noted showed the commencement of the disease to have been at the point where early lymphatic infection was to be expected—*i. e.*, the outer half of the breast—is of itself a point of interest, as suggesting (if doubt is felt upon this point regarding other cases), at least in these cases, the importance of early interference. But of still greater importance, in the light of recent investigations, is the symptom of fixation, to a greater or lesser extent, of the gland to the underlying structures; and upon this heretofore neglected condition, in its relation to the prognosis and the desirability of early interference, I desire more particularly to dwell, if I may be allowed to beg the indulgence of the Society.

L. Heidenhain,¹ of Berlin, examined microscopically specimens of carcinoma of the breast recently operated upon. As a result of his studies of the specimens in 18 cases, he predicted that at least in 12 local recurrences were to be expected. This was evident from the fact that, upon the pectoral aspect of the gland, after its removal, the presence of portions of the neoplasm could be demonstrated. The subsequent history of these patients showed the unfavorable prognostications to be only too well founded, in the main. Of the 12, there was only one whose after-behavior could not be studied. Of the remaining 11, 8 have suffered a recurrence, while only 3 are free from any symptoms of relapse, with still a sufficient time to elapse ere they can be declared free from all danger of the latter. Of the remaining 6, in whom it was predicted no recurrence would occur, all have, thus far, borne out the truth of the prediction. It is only proper to state, however, that in two of these latter cases, a sufficient time has not elapsed to form a fair estimate as to the result.

When one studies the relations which the pectoral fascia bears to the mammary gland, and to that portion of the pectoralis major muscle underlying the latter, it need scarcely be wondered at that the disease, if it involve the entire thickness of the gland, is almost certain to attack the connective tissue between the muscle and the latter. In Heidenhain's attempts to prepare sections for the microscope from the mammary glands removed in the series of cases upon which his observations are founded, he found it almost impossible to separate the muscle from the gland, where portions of the former were left adherent. The fascia

¹ Deutsche Gesellschaft für Chirurgie, xviii. Kongress. Berlin., April 24-27, 1889.

itself is always exceedingly strong and most frequently uncertain in its boundaries. This is particularly true in women who have a large development of adipose tissue in the mammæ. In the case of the latter, although the fascia intervening between the muscle and gland is particularly ill defined, yet the presence of fat serves to lift the diseased organ away from the underlying structures, and the chances of involvement of the latter are correspondingly lessened. It does not follow, however, that the greatest care should fail to be exercised even here, in the removal of the gland. On the other hand, in thin women the gland is found lying closely upon the pectoral fascia for nearly or quite the entire extent of its posterior surface.

Again, it has been shown that in any mammary gland, the site of carcinoma, a very much larger area of the glandular structure is involved than would appear at first sight. In fact, it is asserted, and with a very convincing appearance of truth, that once the gland has become diseased, it is diseased *in toto*. *Pari passu* with the proliferation of the epithelial cells of the acini occurs the proliferation of the cellular elements of the periacinal connective tissue. The diseased action, therefore, is not limited to the hardened nodule or nodules, but these latter simply mark the site where the carcinomatous degeneration is most advanced.

There usually exist, in the retro-mammary adipose tissue, in addition to the blood-vessels, lymph-channels passing from the gland itself to the pectoral fascia. The epithelial proliferation in these pre-existing lymph channels advances with great rapidity, in spite of the intervention of quite heavy layers of fat. Hence it follows that, even though the gland be freely movable upon the muscle, microscopical examination of the pectoral fascia will show that the disease has already reached to at least the most superficial portion of the muscle. An examination of the lymph-channels in amputations of the mammary gland will show that, in at least two-thirds of all cases, secondary carcinomatous deposits are present.

There are two methods by means of which the gland may become attached to the deeper parts: 1st, through a secondary growth occurring in the pectoral fascia, through the medium of the lymph-channels above mentioned; and 2d, by extension of a primary carcinomatous nodule in the gland itself. The effect is precisely the same in either case, the gland becoming fixed to the muscle through the intervention of the fascia or sheath of the muscle. The muscular structures become involved through the lymph-channels which penetrate into the fibrillæ. According to Heidenhain, the process of diffusion of the diseased epithelial elements into the muscular structure, it is more than probable, is facilitated by the contractions of the muscle itself. The muscular

structure, however, is the very last to be invaded ; but once this actual invasion occurs, it becomes morally certain that the entire muscle will become the site of carcinomatous infiltration in a comparatively short time.

Once the muscular structure becomes invaded, the prognosis in this class of cases becomes most unfavorable. A study of 65 cases of mammary amputation in cases in which the muscle was actually invaded by the disease, quoted by Heidenhain as being taken from the statistics of von Volkmann, Küster, and Hellerich, shows that in all, except two, early recurrences took place.

The attention of surgeons, prior to the studies of Heidenhain, has been directed mainly to the question of the presence or absence of secondary lymphatic involvement in the axillary region. Yet it is doubtless true that a nearer and much more certain source of infection has been heretofore overlooked, namely, that through the medium of the retro-mammary lymph-channels passing to that reflection of the pectoral fascia which constitutes the posterior investment of the gland. Involvement of the fascia is always a serious matter, for the reason that the extreme tenuity and uncertain anatomical boundaries of this structure render it almost impossible for the surgeon to separate it from the underlying parts. Where attempts are made to detach it from the muscle, there are almost certain to be left behind remains of the connective tissue from the gland, particularly in thin individuals. These may, and generally do, contain lymph-channels already infected. In 12 out of 18 mammae examined with particular reference to this point, carcinomatous appearances were found, these consisting of either actual secondary growths or epithelial invasion of the retro mammary lymph-channels. These appearances constituted the basis of a prediction that recurrence would take place, and in 8 out of the 12 cases, from which these specimens were taken, recurrence actually took place.

The importance of these facts to the practical surgeon is self-suggestive. Instead of directing his attention to the condition of the axilla as of the first importance in a case of suspected carcinoma of the breast, his first care should be to determine, if possible, the amount and extent of involvement of the parts situated posteriorly to the gland. In any case, the attempt should never be made to avoid opening the muscular sheath during the operation, but rather it should be the aim of the operator to remove a slice of that portion of the muscle lying superficially and immediately adjacent to the diseased gland. Even in cases in which the latter is freely movable, this course is as rational as the very generally accepted one of dissecting out the lymphatic structures occupying the axilla, whether these are markedly diseased or not, in every individual case.

A still more radical course should be pursued in those cases in which the muscle is indubitably invaded. Here nothing short of an extirpation of a portion or all of the muscle will serve as any guarantee against the return of the disease. This should include the clavicular and sternal attachments, together with the periosteum at these points. As has been shown, the ease with which the muscular structure, once invaded, becomes extensively involved, is sufficient justification, in any given case, for the performance of this radical procedure. The operation is not rendered a very much more serious one because of this added feature, and the functional disturbance is scarcely noticeable.

No argument in favor of early and radical operations for the removal of the breast in carcinoma can be more striking and convincing than that which has for its basis the statement of the fact that the larger proportion of cases which pass a period of 3 years without recurrence are among those who have submitted to such operations; and the added fact that among those who have lived for a period of years (reaching, as in one of my cases, beyond 10 years), to the early discovery of the disease and its prompt removal may be attributed the immunity, in the majority of cases, from a return of the disease.

As to the expectancy of life, in those operated upon, and who have finally perished from the disease, either *in loco* or as secondary deposits, contrary to the opinion held by many, the argument is altogether in favor of the attempt to rid the patient of the disease. In my own observation, nearly a year of life was gained, on the average, among those operated upon, but who finally died of the disease, as compared to those who had allowed the disease to pursue an uninterrupted course.

GALVANISM IN THE TREATMENT OF CORNEAL OPACITIES.

BY L. A. W. ALLEMAN, M.A., M.D.

Cases of corneal opacity are very frequently discouraging ones, alike to the patient and to the physician. It is almost an occasion of reproach to the physician that he should so frequently be unable to afford any relief to a patient who presents an eye, healthy in every particular, and capable of giving the best visual results save for some loss of transparency of corneal tissue, limited perhaps to a superficial layer. To the patient, likewise, a corneal opacity is particularly unfortunate, not only on account of the visual defect, but because it aggressively invites the attention of others to its existence.

Recent corneal opacities will sometimes respond quite readily to

treatment, and the reparative power of nature is undoubtedly greatly assisted by stimulating applications, massage, and the like, but we soon reach the limit of our usefulness; and for old opacities, little remains but surgical interference. This is frequently inadvisable, and always unsatisfactory.

Corneal transplantation offers an inviting field, but thus far has accomplished but little. The clearing of the cornea surrounding the transplanted area will, it seems, be more frequently obtained than the permanent transparency of the engrafted tissue. Even were it a more generally successful operation, its utility is limited to those cases in which no benefit can be obtained from an iridectomy, and where the opacity does not extend through the entire thickness of the cornea.

It is impossible to obtain satisfactory statistics as to the frequency of lesions of transparency of the cornea. Having once applied for relief and receiving little encouragement, patients do not drift from one eye clinic to another, consequently the records of these institutions would lead us to infer that such cases are more rare than is actually the case; but when we remember the vast number of cases of keratitis that we daily see, many of them so severe that they must leave permanent traces of their existence, we are convinced that corneal opacity must be a very common affection.

It is with great pleasure that I present a contribution to the therapeutics of these unfortunate cases, which I believe to be of some real value, and that offers at least some hope of improvement in nearly every case.

The method of treatment to which I refer, is the application of galvanic electricity directly to the surface of the cornea. So extravagant have been the claims of some of the advocates of electrotherapeutics that the profession in general, having been disappointed in their endeavors to justify these statements by their own experience, are inclined to look with great distrust upon any plea for the further extension of this method of treatment.

I have, therefore, endeavored in making the experiments with which I have been for some time engaged, to avoid as far as possible all errors which may arise from careless observation or too vivid imagination on the part of patient or physician.

In testing the vision from time to time I have used artificial illumination of unvarying brilliancy, and, by frequently changing the test-letters, have endeavored to prevent the patient from committing them to memory.

I have measured the vision exactly in each instance, using a steel tape as a measure of distance, to obtain greater accuracy.

When in any case I have used a mydriatic, either to ascertain what

vision could be obtained through the clear cornea surrounding the scar when the pupil was dilated, or to better observe the condition of the lens, iris, etc., I have either taken no records of the vision till the effects of the mydriatic have passed away, or have indicated in my records that the pupil was dilated at the time the record was made.

During treatment the visual record was always taken before the instillation of cocaine or the application of the current.

The idea of using galvanism for the removal of corneal scars first suggested itself to me from noticing the good results obtained by gynæcologists in some cases of old inflammatory deposits in the pelvis. It seemed to me reasonable that a similar absorption of repair-tissue could be brought about in the cornea, and that electricity would prove a most valuable therapeutic agent, could it be so applied as to produce sufficient molecular disturbance in the cloudy area to bring about its absorption, while at the same time it should have no ill effects upon the healthy tissue of the eye.



FIG. I.

I concluded that a small electrode applied to the surface of the cornea was indicated, since by this means a current of great density would be applied directly to the diseased point and since the greatest molecular activity is induced at a point directly in contact with the electrode, the indication of strictly limiting the current's action would be best fulfilled. I apply the other electrode to the cheek, making the path of least resistance through the soft tissues of the face, in order

not to bring the intra-cranial organs nor more of the globe than necessary within the circuit. By reference to Fig. I., the advantage of the small electrode in immediate contact with the cornea may be readily seen. The current is represented as consisting of a certain number of strands, in both instances the same. It is apparent that the current is brought to bear much more directly upon the cloudy area in A than it is in B. (Fig. I.)

It was my original intention to make use of some of the preparations of mercury commonly employed in the treatment of corneal opacities, hoping by the combined action of mercury and electricity to obtain better results than from the use of either agent alone. I made several experiments, usually with the yellow oxide, but found it well nigh impossible to find any vehicle for the mercury which would at the same time act as a good conductor and prove unirritating to the eye. I finally hit upon an expedient which has proved very satisfactory: it was to make the tip of my electrode of silver, which plunged into a bath of metallic mercury, would form with it an amalgam and hold a globule of mercury on the end of my electrode. This makes a smooth and adjustable cushion to apply to the cornea; it fits itself perfectly to the corneal curve, and precludes the possibility of any unevenness on the surface of the electrode damaging the cornea. Whether or not the mercury in any way assists the action of the current it is quite impossible to say, but be this as it may, it furnishes in practice a most satisfactory tip for the corneal electrode.

After trying various forms of electrodes, I find the most desirable model to be the one shown in Fig. II. It consists of a small silver bar, *a*, 12 mm. in length, insulated, except at the ends, by a hard rubber shell; the exposed surface at the lower extremity is slightly concave, the better to hold the globule of mercury, and is 7 mm. in diameter. The upper extremity carries a thread which screws into a metal collar at *b*, allowing the tips to be changed when corroded by the action of the mercury. The collar is attached to a copper spring, *c* which still further protects the cornea from injury when the electrode is moved in the fingers, and at the same time being perfectly flexible, allows the tip to be adjusted to any desired angle, which greatly assists the convenience of application. The spring is fastened to a hard rubber handle, *d*, 10 cm. in length and 1 cm. in diameter, through which a conducting wire is carried to the binding post, *e*, at the upper extremity. (Fig. II.)

I have found this electrode most convenient in practice, and fulfilling all the desired indications.

In the immediate application of electricity to the cornea some form of galvanometer is essential. My first few experiments were conducted

without one, and I soon became convinced that an accurate measurement of the current was demanded alike for the safety of the patient and to insure the utility of the treatment. For the small current upon an anæsthetized cornea produces no sensation whatever, therefore the patient cannot inform you whether or not the current is passing. Should the battery be reasonably constant and always in repair, an ideal condition scarcely to be hoped for in practice, the resistance in different patients, and even in the same patient at different times, varies so enormously that it is impossible to judge even approximately the amount of current which the patient is receiving. I have obtained from the same number of cells used, as nearly as I could judge under similar conditions, currents ranging from $\frac{1}{4}$ to 3 m. a.

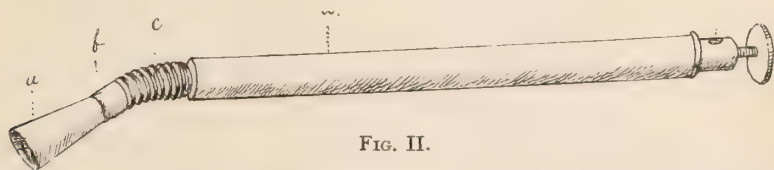


FIG. II.

I am using a milliamperemeter made by Fleming, of Philadelphia. This instrument will measure $\frac{1}{4}$ m. a., and has proved extremely satisfactory. Beside a variation of resistance from varying conditions of conductivity at the beginning of an application, we have to take note of the diminution in resistance during the passage of the current. Erbe¹ has experimentally demonstrated this, and the deflection obtained during the continuous passage of the current, by first increasing and then diminishing the number of cells, is shown in the following table:

With 8 cells	0° defl.	With 20 cells.....	46° defl.
“ 12 “	6° “	“ 16 “	40° “
“ 16 “	28° “	“ 12 “	34° “
“ 20 “	42° “	“ 8 “	26° “
“ 24 “	50° “	“ 4 “	12° “

To avoid the annoyance from such variations in resistance, I found it convenient to use a rheostat; and since the satisfactory instrument I am at present using is the only one with which I am familiar, sufficiently delicate to be available with the extremely small currents with which these applications are made, a brief description may be of interest.

The rheostat was made by Mr. J. A. Barrett, and depends in principle upon the diminished resistance, under pressure, of a pledget of cotton permeated with powdered graphite. Its construction may be

¹ Electro-Therapeutics, p. 48.

better understood by reference to Fig. III. It consists of a hard rubber cylinder, *a*, containing the cotton, which rests between a metal plate at one end of the cylinder connecting with the post, *b*, and a metal plunger, the rod from which passes through a thread at *c*, and terminates in the milled head *d*. By the rotation of *a* the density of the cotton, and consequently the resistance offered by the rheostat, may be increased or diminished at will. Wires conduct from *b* and *e* to the binding posts *f* and *g*, by which the rheostat is included in the circuit. (Fig. III.)

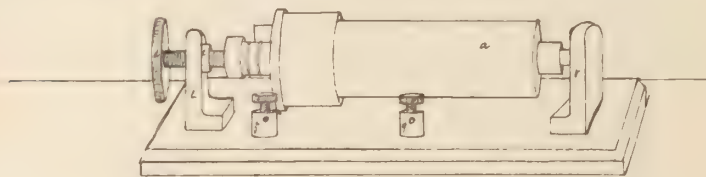


FIG. III.

In making an application, I stand behind the patient whose head is thrown back in a reclining chair. I give one electrode to the patient and direct him to press it against the cheek on the same side as the eye to be treated. I then place the binding post of the eye electrode against the patient's tongue and turn the rheostat, until the needle indicates the strength of current I desire to use, when, after dipping it in a bath of mercury, I place the electrode upon the cornea, which has been anæsthetized by the previous instillation of cocaine. The rheostat is now intrusted to an assistant, who carefully watches the needle of the milliamperemeter, and by turning the screw of the rheostat, maintains a uniform current during the application. With the thumb and first finger of the left hand the lids are separated sufficiently to prevent their coming in contact with the electrode, since a current easily tolerated by the cornea is painful and irritating when passing through the margin of the lids. The electrode is held with the right hand, gently, in contact with the cornea, and a careful watch is kept during the application that the contact is not broken nor too firm a pressure made against the cornea.

It is perhaps unnecessary to test the current by first passing it through the tongue, which offers practically the same resistance as the eye, but as there is always the possibility that by some accident the rheostat or milliamperemeter may be out of order or short-circuited, I think it safer to first try the current upon the tongue, where, if it is too strong, the patient will quickly inform you.

The cathode is applied to the cornea, being theoretically indicated for the stimulation I wish to produce.

The strength of current that may be safely employed varies widely in different cases. I begin treatment with $\frac{1}{4}$ or $\frac{1}{2}$ m. a. for one minute; should this be easily borne, I gradually increase the time up to three or four minutes, which is about as long as it is possible to hold the electrode firmly in contact with the cornea without fatigue. The strength of current may be slightly increased at each application, until the patient's point of tolerance is reached. I place as the limit in any case a current which is followed by a slight irritation, which shall subside before the next application, which I usually make after an interval of one day. The strongest current that I have employed is 4 m. a. for three minutes; but I do not think any better results were obtained by this than by a smaller current repeated at more frequent intervals.

A current of 4 m. a. will only be borne in exceptional cases, and 1 to $1\frac{1}{4}$ will, I think, give the best results. With this current considerable irritation is sometimes experienced at the anode by thin-skinned people, and I have frequently produced marked vesication on the cheek without setting up any disturbance of the cornea.

During the passage of the current the iris is seen to dilate, even when already somewhat dilated by the action of cocaine.

It is perhaps worthy of note that with the electrode on the cheek, as a rule, no light sensations are observed by the patient during the making or breaking of the current, which I think indicates that the current does not deeply penetrate the eye, because the same current strength through the closed lids with the electrode at some indifferent point does usually excite such sensations.

The following series of cases are some of those upon which I have carried out corneal galvanization during the last year and a half. I have been obliged to omit some cases which have been interesting and instructive to myself when no visual record was obtainable, the patient possessing only l. p., and where I depended for my record of results upon a photograph; such patients having disappeared without giving me an opportunity to obtain a second photograph.

When first recording my cases I endeavored to obtain a record for comparison by measuring the opaque area, but this proved not to be satisfactory. The boundary of the opacity, especially when under treatment, is not well enough defined to allow of accurate measurements being taken.

(To be continued.)

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EDITORIAL.

THE LIMIT OF HUMAN EXISTENCE.

A community is usually surprised when it is announced that one among them has died at the advanced age of one hundred years. When, however, the statement is made that some one has passed away at the age of one hundred and ten, incredulity takes the place of astonishment, and we imagine that a good deal of evidence would be requisite to convince even the most credulous that individuals now exist whose years reach a figure double the three score and ten of the Psalmist. Yet such is the statement made by Dr. Remondino, of San Diego, in a paper recently read by him before the Medical Society of the State of California; and we think that the evidence submitted by him to substantiate this remarkable statement would be accepted by most persons as conclusive.

At the Indian village at Capitan Grande are several Indian women whose ages are over one hundred and thirty years. Dr. Remondino quotes Dr. Edward Palmer, long connected with the Smithsonian Institute, as authority for the statement that there lives in Southern California a squaw who is one hundred and twenty-six years old, and that he has seen her carry, tied up in a blanket, six water-melons for a distance of two miles. A few miles below San Diego lives an Indian, bent and wrinkled, whose age is computed at one hundred and forty years. Although blind, he is still active, and daily goes down to the beach and along the beds of the creek in search of drift-wood, making it his daily task to gather and carry to the encampment a fagot of wood. Still another is mentioned who, although one hundred and fifteen years old, is wonderfully active and a great walker, a fifty-mile trip to the

mountain for a bag of acorns, which he packs on his back, being an ordinary matter for the old gentleman. Father Ubach, who is connected with the missions, is thoroughly conversant with the personal habits of all these old persons. He says their habits have been those of strict temperance and abstemiousness, their diet being exceedingly simple, consisting of acorns, flour, and water. Dr. Remondino thinks that the climate is an important factor in producing this great longevity. There is in Southern California an almost complete immunity from hepatic and renal disorders; no land is so free from lung affections, while rheumatism and malaria are unknown. It results, therefore, he says, that from childhood to old age there are no deteriorating influences to encounter, and green old age is reached with an organism unimpaired and fully able to perform all its physiological functions, which enables the body to prolong its physical existence to that extreme limit, that makes euthanastic death in that climate not only a possibility, but a probability.

ADULTERATION IN FOODS AND DRUGS.

We have already had occasion to refer to the excellent work done by Dr. W. K. Newton, Dairy Commissioner of New Jersey, in his efforts to protect the people of that State from those who, without regard for the public weal, adulterate to an almost incredible extent the staple articles of diet and the commonest of drugs. That these frauds are perpetrated in many parts of the country there is no doubt; but there is, we regret to say, with a few signal exceptions, but little done to prevent them, certainly not a tithe of what should or could be done were the disposition commensurate with the crime.

Dr. Newton's report for the past year informs us that, of 2,577 articles of food analyzed, 1,102, or 43.96 per cent., were adulterated. While all the American canned goods examined were found in good condition and free from metals or other dangerous ingredients, 88 samples, out of 107, of foreign canned goods were adulterated, the chief adulterant being copper, which had been added to give a green color. Three-fourths of the samples of extracted honey analyzed were adulterated with glucose or cane-sugar syrup. More than half of the molasses specimens were adulterated with molasses or cane-sugar; and what was sold for molasses was glucose and contained tin. Seventy per cent. of the pickles contained copper; seven samples of baking-powders contained alum; raspberry syrup contained no raspberry, but in its stead an artificial ethereal flavoring essence colored with an aniline dye; and sausages were dyed with Bismarck brown and garnet red, and coated

with a varnish composed of shellac, resin oil, and alcohol. Jellies, however, bore off the palm. Of 192 samples, 159 were adulterated; starch, water, acetic acid, currant flavoring extract, glucose, and coloring matter masquerading as currant jelly. In Philadelphia one manufacturer sold thirty-nine tons of this stuff in a single week, while another delivered one thousand tons in six months. Fifty factories are engaged in this business in this country.

Of the drugs examined, 64.55 per cent. were found adulterated or not equal to the standard. The fraudulent list included cream of tartar, opium, paregoric, iodide of potassium, seidlitz powders, spirit of nitrous ether, laudanum, and tincture of chloride of iron.

The whole exhibit is a most shameful one, and the only regret one feels, after he has read the report of Dr. Newton, is that there are not more who can be made to share the fate of Kemmler, even to the extent of shutting off the current too soon and having to turn it on again, before it is absolutely certain that life is extinct.

BROOKLYN SOCIETY FOR NEUROLOGY.

On the evening of April 14th, 1890, Drs. Chas. Corey, John C. Shaw, William Browning, T. M. Lloyd, C. F. Barber, and Thomas L. Wells met at the residence of Dr. Shaw, No. 2 Sidney Place, and organized The Brooklyn Society for Neurology. Dr. Corey was elected president and Dr. Wells, secretary. Arrangements have been made to hold the meetings of the Society in the rooms of the Kings County Medical Society at 356 Bridge Street, on the 2d Wednesday evening of each month.

WAS IT HYDROPHOBIA?

Dr. A. Ross Matheson has received a letter from Dr. Paul Gibier, Director of the New York Pasteur Institute, which contains the subjoined extract referring to the article: "Was It Hydrophobia?" *BROOKLYN MEDICAL JOURNAL*, p. 653, October, 1890.

"Allow me to compliment you for the remarkable observations you have published in the *BROOKLYN MEDICAL JOURNAL*. To my mind there is no doubt about the nature of the case. Every symptom presented by the patient shows unmistakably that hydrophobia was the trouble, and the only evidence which you have failed to furnish was that which might have been produced by the inoculation of some animal with the 'saliva' from the patient."

OBITUARY.

EDWARD J. MEALIA, M.D.

Dr. Edward J. Mealia, the subject of our present obituary, was born in Hudson County, N. J., on December 24, 1859. While quite young his parents removed to this city, placing him at school in Flushing, L. I., where he received such preliminary education as befitted him to enter St. Francis' College, in New York, becoming a classmate of the many bright men who to-day adorn many departments of public and private life in Brooklyn.

During his academic studies he always cherished the desire to pursue the healing art, and though surrounded by the social influences of other professions, whose successes and careers furnish epics for college history and awaken enthusiasm in the student of his period of life, yet, true to first love, he left his Alma Mater with the reputation of a good scholar, determined to cast the die for fortune with the medical profession, and accordingly entered the College of Physicians and Surgeons of New York, whence he received his diploma with the Class of '83.

He afterward took a post-graduate course at the New York Polyclinic, and with such success that during a vacancy in the faculty he was placed in charge of one of the departments. He commenced practice in Brooklyn soon after, and his earlier years were devoted to study and faithful attendance to such cases as fate or fortune throw in the path of a conscientious beginner.

The opportunities which develop character and make the lives of medical men conspicuously brilliant are vouchsafed but to the few, and the ordinary graduate in medicine, entering the professional arena without the encouragement of a friendly recognition or a helping hand from a more independent brother, finds lucrative patronage a plant of slow growth, for whose fruition he must be satisfied and resolved to labor and to wait. This attribute of patience our deceased brother cultivated, not by any mental conflict, in the desire for pecuniary reward, as he felt that time would bring its legitimate deserts, but by the more healthful resort of renewing his friendship with those authors whose classic works he loved and read. This duty to himself he could never forget: it conserved the spirit of student life and lasted till his death.

In November of last year he was married, and made an extended tour through the Southern States, returning to Brooklyn about the time when the sickle of influenza was commencing its deadly harvest. Who to-day in the profession does not recall with terror the ravages of that epidemic? The race and victory went to the strong, and in the legion

swept down by exposure, overwork, and the insidious disease, was the faithful attendant on his suffering fellow-man, Dr. Edward J. Mealia. His strength wasted day by day, his cough increased in frequency, and long restless nights impressed their effects on a shattered nervous system. But although flesh and strength and rest were lost, his amiability of temper and genial disposition never forsook him, and the irritability, so frequently met toward the close of an exhausting disease, he never permitted to disturb him; he even smiled at fate, and met it as a hero. On his death-bed he requested Dr. Chase to propose his name for membership in the Medical Society of the County of Kings, and one of his last expressions of pleasure was at the announcement of his election.

He died at his residence, 233 Van Buren Street, on June 6, 1890, at the age of thirty years, five months, and twelve days. He had been married but six months at the time of his decease, and leaves a widow to mourn his early demise. His parents (both advanced in life) and a brother, the Rev. James F. Mealia, of Brooklyn, survive him.

D. G. BODKIN, M.D.,	} Committee.
B. F. WESTBROOK, M.D.,	
WALTER B. CHASE, M.D.,	

PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Regular meeting of the Medical Society of the County of Kings, held at the Society's building, No. 356 Bridge Street, Brooklyn, N. Y., on Tuesday evening, September 16th, 1890.

The meeting was called to order at 8 o'clock, with the president, Dr. Walter B. Chase, in the chair.

There were about thirty-five members present.

The minutes of the previous meeting were read by the Secretary.

THE CHAIR.—Are there any errors or omissions in the minutes as read?

Dr. WEST.—The name of Dr. William M. Hutchinson is omitted in connection with the subject of sterilized milk.

THE CHAIR.—I would say that the name of Dr. Kretzschmar should appear at the head of the committee concerning a scheme for the reorganization of the staff of the Kings County Hospital. I may state in this connection that there has been a resignation from that committee

of Dr. Bogart. The President appointed, to fill the vacancy, Dr. Barber, who declined. I have therefore filled the vacancy now by naming Dr. Alexander J. C. Skene, putting another gentleman on that committee who is familiar with hospital matters.

There being no further errors or omissions, the minutes were approved as read.

The Council reported favorably upon the application of J. M. Griffin, Albany Medical College, 1864.

It was regularly moved and seconded that the report of the Council be adopted. Carried.

The Secretary presented the following applications for membership :

Dr. M. J. Leland, No. 406 Bergen Street, University of the City of New York, 1883 ; proposed by Dr. William M. Hutchinson ; endorsed by Dr. J. A. McCorkle.

Dr. Wilbur L. Rickard, 451 Halsey street, Long Island College Hospital, 1889 ; proposed by Dr. Herbert C. Rogers. Endorsed by Dr. Hutchinson.

Dr. Sidney H. Gardiner, No. 1085 Gates Ave., Ontario University, Canada, 1889 ; proposed by Dr. Walter B. Chase and endorsed by Dr. Myerle.

Dr. Frank E. Wilson, No. 1249 Bushwick Avenue, Jefferson Medical College, 1882 ; proposed by Dr. Walter B. Chase and endorsed by Dr. A. Ross Matheson.

Dr. Henry L. Schelling, No. 941 Willoughby Avenue, University of the City of New York, 1890 ; proposed by Dr. F. H. Clark and endorsed by Dr. Walter B. Chase.

Dr. A. E. Smylie, No. 124 Penn Street, College of Physicians and Surgeons of New York, 1883 ; proposed by Dr. Walter B. Chase and endorsed by Dr. J. M. Peacocke.

Dr. Clarence B. Sheldon, residing on Nostrand Avenue, corner of Macon Street, College of Physicians and Surgeons of New York, 1887 ; proposed by Dr. Frank E. West and endorsed by Dr. Hutchinson.

Dr. W. C. Braislin, No. 109 Gates Avenue, College of Physicians and Surgeons of New York, 1890 ; proposed by Dr. F. D. Bailey and endorsed by Dr. W. M. Hutchinson.

Dr. Charles G. Purdy, No. 56 Pulaski Street, University Medical College of New York, 1888 ; proposed by Dr. Walter B. Chase and endorsed by Dr. W. M. Hutchinson.

Dr. H. Messenger Ayres, No. 91 Lafayette Avenue, Long Island College Hospital, 1880 ; proposed by Dr. Glentworth R. Butler, and endorsed by Dr. Cox.

Dr. J. W. Van Dusen, No. 901 Bedford Avenue, University of the

City of New York, 1884; proposed by Dr. George A. Evans and endorsed by Dr. Walter B. Chase.

Dr. Martin Amador, No. 99 North Oxford Street, University of the City of New York, 1880; proposed by Dr. Alexander F. Carroll. Endorsed by Dr. Louis M. Dusseldorf.

The following, having been regularly proposed and duly reported upon by the Council, were declared elected members of the Society: Drs Benjamin F. M. Blake, Frederick K. Priest, Joseph P. Warbasse, George Dominguez, J. F. Kuhn, R. C. Brewster, and Henry Wallace.

SCIENTIFIC BUSINESS.

The first paper of the evening entitled, "Objections to the General Use of Hypnotism," was read by the author, W. H. B. Pratt, M.D., and discussed by Drs. Mattison, E. P. Thwing, and Minard, the latter reading some notes made by her at a clinic at Heidelberg.

The next paper presented was upon "Incomplete Hepatization in Lobar Pneumonia," by Glentworth R. Butler, M.D. This was discussed by Drs. West, Chase, and Butler.

The last order of scientific business was a paper entitled, "Morning Headache of Continuous Tire and Exhaustion," by William Browning, M.D., which was substituted for a paper on "Some Observations upon Brooklyn's Water Supply," as announced upon the programme.

UNFINISHED BUSINESS.

Under this order, the chair called for the report of the obituary committees, the first being that upon the late Dr. E. J. Mealia, of which Dr. D. G. Bodkin was chairman.

In this connection the chair stated in explanation that the Society would perhaps remember the fact that Dr. Mealia was elected to membership just about the time of his death, and the Society saw fit to place his name among the members of the Society. Dr. Bodkin was appointed a member of the obituary committee on the death of Dr. Mealia, and to enlarge that committee as he saw fit.

Dr. Bodkin stated that he had appointed as members of the committee with himself, Drs. Westbrook and Chase.

Dr. Bodkin then read the report of the obituary committee on the death of Dr. Mealia.

NEW BUSINESS.

The Secretary read the following communication:

"BINGHAMPTON, N. Y., July, 1890.

"In conformity to a resolution adopted at a session of the N. Y.

State Medical Association, Third District Branch, June 19th, 1890, the medical organizations of this State are hereby invited to appoint annually a special committee on 'Popular Sanitary Science,' whose duty shall be to prepare or supervise familiar articles for the secular press, on subjects involving the care and protection of life and health of the individual and the community in accordance with the accepted principles of sanitary science.

"State and local boards of health are also solicited and urged to publish, free for distribution through the medium of the public schools, tracts on practical sanitation.

"J. G. ORTON, M.D.,
"President.

"F. W. PUTNAM, M.D.,
"Secretary."

There being no motion made in reference to the above communication, the chair directed that the same lie on the table.

The Secretary also read the following resolution, which had been handed to him :

"*Resolved*, In welcoming home our associate, Dr. E. P. Thwing, from his long absence in the East, we take occasion to express our cordial commendation of his efforts in reference to the projected asylum for the insane at Canton, the first in the Chinese Empire, and an enterprise worthy of our sympathy, not only for its humane purposes, but as opening a new field in psychological study of Eastern life, and in the application of Western science to the care and cure of mental disease."

It was moved by Dr. E. A. Day and duly seconded, that the above resolution be adopted. Carried.

There being no further business before the Society the meeting then adjourned.

W. M. HUTCHINSON, *Secretary*.

EXHIBITION OF AND DISCUSSION ON CLINICAL CASES,
BEFORE THE HARLEM MEDICAL ASSOCIATION, OF
NEW YORK: STATED MEETING, OCT. 1, 1890.

Dr. RICHARDS presented a boy six years of age. He sustained an injury to the radial and median nerve by falling on a piece of glass. The boy was taken soon afterward to a surgeon, who operated upon the hand, suturing both nerves. Subsequently to this a second opera-

tion was decided upon, because it was found a portion of the wounded surface was open, with suppuration present. On cutting down again there was found only partial union of the nerves.

On September 2d he was sent to him, and there was found great tenderness on pressure over the entire affected area. The boy had no control over the muscles of the forearm, and only the slightest motion of the fingers was apparent. Combined faradism and galvanism were tried, and on September 27th his power over the muscles was plus 10 with the dynamometer, with tenderness not so great as formerly. The speaker presented this case because of its great interest, and he believed that if nerves were more frequently sutured, after injury, they would secure better results.

The second case presented by Dr. RICHARDS was a Russian, aged forty, a locksmith by occupation, who, six weeks ago, cut his right wrist, by falling through a window and injuring the ulnar nerve. There was no attempt at nerve-suture made in his case, the superficial wound being closed by three sutures. The dynamometer registered — 10. right, left . 45. On yesterday the right hand was 15 +, the left the same. He now has better use of the hand than formerly.

The third case was that of a little girl, four years of age, a native of the United States. Until eight months of age she was perfectly well, when she had a severe attack of summer diarrhoea, lasting three weeks, which left her in a very weak condition. At the fourteenth month she had another attack, and at the twentieth month a third attack of diarrhoea, which threw her back into her former helpless condition. She was then taken to the Polyclinic, and her condition was diagnosed as one of spinal trouble. Afterward, however, they arrived at the diagnosis that the case was one of congenital weakness of the muscles.

Last Christmas the case was referred to him, and on examining the patient he found she could not stand on her feet. Her condition was such that he despaired of doing her any good; and it is only within the past four months she has shown any degree of improvement. He considered it a case of retarded muscular development. He considers it of interest, inasmuch as it illustrates the differential diagnosis between this condition and polio-myelitis anterior.

Dr. VAN SANTVOORD said it was a very much exaggerated form of the kind he was accustomed to see on Randall's Island. He had repeatedly examined such cases, and found nothing abnormal beyond an extreme helplessness, such as exists in the patient of Dr. Richards. This retarded development is frequently found in the inmates of all infant asylums. By proper care and other measures he thought it was not necessary they should get into this condition. Dr. Putzel, the

neurologist at the hospital, recognized this as an ordinary condition.

Dr. RICHARDS considered it very difficult at first sight to make a differential diagnosis between this and infantile spinal paralysis. When the patient first came to him a number of physicians had seen the case and diagnosed it as one of infantile paralysis.

Dr. WOLFE thought the muscle and nerve reaction would determine that. Mere atrophy of the muscles without cause would be hard to find. The patient had several attacks of diarrhoea, but in polio-myelitis anterior they generally get but one attack. We sometimes get a hysterical paralysis in children as young as this, and he would like to ask Dr. Richards if the patient had ever any symptoms of hysteria.

Dr. RICHARDS.—No, sir.

Dr. WOLFE considered it a paralysis of some cerebral origin.

Dr. RICHARDS presented another patient, an unmarried female, forty years of age. She was perfectly well till about a year ago, and regular in all her functions. A year ago last June she heard voices, which troubled her very much. As she stood at the window of her room, the voices seemed to come across the street. The voice was that of a young man, who said: "Why don't you shave off your moustache?" This voice followed her wherever she went; but she saw no one at all. She heard the voice more frequently at night than by day. She left the place she was living in, and the voice still followed her. She was a constant masturbator. Dr. RICHARDS thought this case was hopeless. A great many of these cases go from bad to worse, and end in dementia. No one can tell when the explosion came. This patient should therefore be put away in some institution where she could be taken care of.

Dr. MANLEY would like to ask what therapeutic value marriage would be in such a case, inasmuch as it called the sexual organs into normal activity. He knew a great many neurotic individuals to whom the marriage state had been productive of good.

Dr. WOLFE thought that a strong, healthy female, mentally and physically, would not be inclined to masturbation, as this patient. He considered there was some predisposing cause for the existence of masturbation in this case. He thought in a patient like this, with inherent insanity, some such illusion would develop anyway. He said chronic masturbation was regarded, by most alienists, as a symptom of chronic mania, or melancholia, as the case may be. He considered the prognosis in this case very grave, if the condition was not hereditary, lasting a year, as it has been in the case of the patient of Dr. Richards. If there was a hereditary predisposition in this case, the prognosis was so much the graver.

Dr. RICHARDS considered Dr. Wolfe's premises well taken. He

could get no history of the patient. He thought that the habit of masturbation grew on the patient. He knew cases of whole boarding-schools practising the habit. It was a habit that was very largely practised.

Dr. WOLFE said, in reply, that he meant to say, in cases of mania or melancholia, masturbation was a very frequent symptom, especially excessive masturbation. He knew the habit of masturbation had been widely practised, still there are a great many traits of character which must be regarded as peculiar. Every one has certain peculiarities about him, and when these take the form of some positive vice, moral or mental, it then assumes a diseased condition. Take, for instance, the difference between the hallucination of a sane and an insane person; it consists in this: the hallucination of a sane man is immediately laid aside, no more importance being attached to it; while the insane man recognizes it as an established fact. He does not think he heard, for instance, a voice, but is convinced of the fact of his having heard it.

Dr. MANLEY said that, before presenting to the meeting four cases illustrating the different phases of typhilitis, he would first ask the permission of the members to exhibit a patient on whom he operated, the 11th of last March, for the radical cure of an irreducible congenital inguinal hernia. The patient was a baby, three months of age, who had worn a truss, but found it impossible to continue its use, owing to the pain it gave. Finding the hernia getting larger and larger, Dr. MANLEY was called in to see the patient, and advised operation. The child was but three weeks old when the operation was performed, and the following reason was given for doing the operation at so early a date: The child, for the first twelve months or so, lies on its back all the time, the abdominal ring obtains an obliquity as the patient develops, the cicatrix becomes firmer and stronger, and in the majority of such cases a cure may be safely promised. In this case no truss could have effected a cure, inasmuch as the sac was adherent to the spermatic cord, showing that this condition had developed at the time the testes came down, probably between the sixth and seventh month of intra-uterine gestation. After the dressing was applied in this case the wound healed almost immediately, with the exception of a slight irritation, caused by silk suture. This patient had not been seen since the operation, the 11th of last March, and the result had been entirely successful.

Dr. MANLEY next presented a specimen of typhilitis perforation treated without operation; with result, death. This case he was called in to see in consultation. The patient, a young man, had been ill

four days. When he saw him he was in such a weak condition that operation was inadmissible. There was no distinct fullness anywhere, and especially over the cæcum, where it is generally present. On the following day he died. A post-mortem was secured, and what was of particular interest was the situation of the perforation. They would be told that amputation of the appendix was the proper thing to do here. This case proved that this operation would not have saved this man's life, because the seat of the ulceration was at the juncture of the appendix with the cæcum. There was present a general peritonitis in his case; the fecal matter and pus, having been primarily encysted, had burst into the general peritoneal cavity. They would find the perforation in this case at the base of the appendix. He has had such good results from operations under similar circumstances that he regretted he did not do one here.

The next patient was a case of typhilitis perforation treated by operative interference, with recovery. The patient had been two weeks ill, and was getting along very well until a sudden change came, which caused the doctor to suspect that an abscess had burst internally. His condition was the same as that of the patient who died and from whom the specimen they saw had been taken. He had a temperature of $104\frac{1}{2}^{\circ}$, pulse 140. He had persistent vomiting and the peculiar hard belly of peritonitis. He was so weak that he thought he would die under the anæsthetic. An opening was made through the abdominal wall along Poupart's ligament, acting on the old view of the pathology that a typhlitic abscess is extra-peritoneal. The cæcum was found adherent to the mural peritonæum everywhere; while separating it from the fascia transversalis, his finger went down through a soft abscess-wall, and intestinal gas with pus and fæces escaped. The parts were given good drainage, with no antisepsis. After irrigating with warm water, a drainage-tube was inserted. He went to work on the 11th of September. There still remained a small fistulous opening, which he attributed to the patient going to work too soon. He did not think the causation of this condition due in every case to the appendix by any means.

The next patient was one of more than ordinary interest. The patient was a sailor. Three years ago, while exposed to inclement weather at Port au Prince, in the West India islands, he contracted inflammation of the bowels, so that his life was despaired of. He recovered, however, and six months later, when he came back to the United States, he had a relapse. He was laid up in bed for a month, and then had another relapse within a year. The interesting feature of the case was that he would pass pus in the urine while at Port au Prince. As a rule, the pus came last, sometimes in flocculi and sometimes pure. The only explanation seemed to be that an

abscess had formed an adhesion with the bladder-walls, and drained off in that way. When the patient had a free discharge from the bladder he felt better. He had persistent diarrhoea, no appetite, great loss of bodily strength, and weighed about 105 pounds. A diagnosis of typhilitic abscess was made.

When an opening was made over the abdomen and the cæcum reached, there was no evidence of pus. He passed his finger down, and thought he got fluctuation; the exploratory needle was then passed, and some matter was found. Then he took the point of a forceps and bored down into it, and, after the abscess had been well opened, a large quantity of thick coagulated blood, pus, and fæces came up from beneath, and, by pressing anywhere over the left inguinal region, matter came up through the opening. He was given thorough irrigation, and he went on to complete recovery, gaining forty pounds in weight.

The next patient was a boy, operated upon for typhilitis. He had been ailing three weeks. The abscess in this case appeared to be extra-peritoneal. After operation he made a rapid recovery.

The last case was a boy, nineteen years of age, who had all the acute symptoms of typhilitic trouble, constitutional disturbance, high fever, diarrhoea, etc., with an œdematous condition of the integument. Anything that called forth muscular action in the region of the cæcum gave him intense pain; in fact, his condition seemed to be so clearly one of ripe typhilitic abscess, that he begged the family to permit of a consultation, telling them of the state of affairs, and warning them that the boy would die unless vent was given to pus-accumulation. He got well without an operation, however. There is still some hardness over the region of the cæcum, though he is in perfect health. This is one of that class of cases in which the system seems to dispose of pus by elimination.

Dr. MANLEY next presented specimen of fluid, lymph-like in color and consistency, and gave the following history: He had been called in consultation to see a man who had peritonitis. He had no movement from his bowels for past eight days, with pulse 95° , temperature $99\frac{1}{2}^{\circ}$, with persistent vomiting. For four or five hours he had been having a discharge from the rectum of a fluid such as had been presented at the meeting.

Dr. VAN SANTVOORD considered the specimen presented to be the result of some obstruction to the lymph channels, such as would give rise to an effusion into the peritonæum.

Dr. FITZ GERALD would like to know if the specimen had been examined under the microscope.

Dr. MANLEY said it had not. He thought the fluid was the result of a morbid irritation from above to the mucous lining of the rectum, producing an excessive secretion.

PROGRESS IN MEDICINE.

SURGERY.

BY GEO. RYERSON FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

POSTEMPSKI'S METHOD FOR THE RADICAL OPERATION FOR HERNIA.

(*Riforma Med.*, April 5, 16, 1890; *Centralblatt f. Chirurgie*, No. 34, 1890, p. 651.) At the seventh meeting of the Italian Surgical Society, held at Florence in April last, Postempski reported 50 cases of operation for radical cure of hernia, after his own method; 8 of these were cases of double hernia, 22 of the congenital variety, 22 were acquired; 3 died after the operation: the first from paralysis of the vagus, in a case of fatty degeneration of the heart; the second from purulent cystitis from septicæmia; the third from septic peritonitis. In 2 of the cases the line of union gave way, and in one of these subsequent suturing was successful; in the balance of the cases complete and permanent healing took place. There have been no relapses of the hernia, although four years have elapsed since the first operation was performed.

The method consists of the incision and dissection of the muscular and aponeurotic structures which form the inguinal canal. The spermatic cord is loosened and displaced, and the incised and dissected portion is sutured, by buried sutures, to Poupart's ligament, leaving an opening for the spermatic cord. The latter, which up to this time has been held clear of the underlying parts, after closure of the inguinal canal, is placed upon the external oblique muscle underneath the skin, and the latter finally sutured over all.

IDEAL CHOLECYSTOTOMY IN TWO STAGES.

Slajmer (*Wiener klinische Wochenschrift*; *Centralblatt f. Chirurgie*, No. 37, p. 704, 1890). The indications for extirpation of the gall-bladder are discussed, as well as those for cholecystotomy. The disadvantages of the frequent occurrence of fistula is to be urged against the former, while in the case of the latter the unreliability of the technique and the unfavorable results which have been obtained are to be urged. S. warmly advocates the operation as performed in two stages, and describes Wölfler's procedure, which he claims combines the advantages of ideal cholecystotomy with those of the operation performed in the manner indicated. The gall-bladder is first attached to the abdominal wall as a preliminary step; when adhesions have occurred, the gall-bladder is opened and the bladder emptied, being at once there-

after closed by a double row of sutures. After complete healing of the wound in the gall-bladder, the sutures are removed, the adhesions loosened, and the gall-bladder permitted to resume its normal position. A case operated upon in this manner pursued a quite uneventful course, and entirely recovered.

This plan may be pursued in all cases in which the gall-bladder is movable and accessible to the necessary manipulation. In those cases, however, in which this organ is almost or quite covered by the liver, some difficulty will be experienced in carrying out this procedure.

THE QUESTION OF PRIMARY TUBERCULOSIS OF THE KIDNEY.

(*Centralblatt f. Chirurgie*, 1890, No. 23, p. 627; *Freie Vereinigung der Chirurgen*, Berlin.) At a meeting of this society, held May 12th of the present year, there arose the question of primary tuberculosis of the kidney. Israel expressed views in opposition to the generally received views of surgeons and pathologists, who held that, within the urinary apparatus, tuberculosis may occur as a primary affection in any locality excepting the kidney. The usual course, as heretofore claimed, consists of a primary infection of the bladder, the disease afterward extending to the pelvis of the kidney and thence to its secreting structure by way of the ureters. Israel cites 9 cases of primary tuberculosis of the kidney, reported by Steinthal, of Geneva, and, basing his view upon these, as well as those observed by himself (in which, after extirpation of the diseased kidney, the patient was restored to a condition of complete health), he advances the belief that primary tuberculosis of the kidney is of occasional occurrence. Again, tuberculosis of the testicle and bladder may occur coincidently and primarily in each of these organs, and experience proves (Dentu) that, even when tuberculosis of the epididymis is present, extirpation of the diseased kidney is not contra-indicated, and that the condition of the patient may be markedly improved by this procedure.

Kuester, in the discussion which followed Israel's paper, stated that primary local tuberculosis of the kidney occurred in two ways: The one is developed around the calices, these latter being filled with a golden yellow cheesy mass, upon the removal of which the pelvis of the kidney is found to be filled with tubercle; in the second the cortex of the kidney is infiltrated in numerous points with miliary tubercle. He reports 2 cases of this variety cured by extirpation: one, a thirty-five year old male, who is living, three years after the operation, and in the enjoyment of good health; and the other, a twenty-one year old female, whose case is of especial interest from the fact that an early and accurate diagnosis of the case was made. The presence of tubercle bacilli in

the urine, associated with a slightly enlarged and painful left kidney, together with pain along the ureter upon making pressure upon the kidney, this being followed by a fresh accession of pus in the just previously emptied and irrigated bladder, seemed to establish the diagnosis.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

CÆSAREAN SECTION.

Ruge (*Zeitschr. f. Geb. u. Gyn.*, B. xx., H. 1) reports a successful case of Cæsarean section, with comments. He believes the published statistics of the Säger operation do not represent the actual mortality. Cases ending fatally are not always reported. The danger is greater than in simple ovariectomy owing to possible atony of the uterus, sepsis from leakage of lochia and the effects of uterine contractions in hindering union of the wound. The operation, he thinks, is not often justifiable on the relative indication, especially at the hands of inexperienced operators. Sutures may be continuous or interrupted, of silk, catgut or both combined. He prefers multiple layers of continuous catgut suture.

TUBAL PREGNANCY.

Orthmann (*Zeitschr. f. Geb. u. Gyn.*, B. xx., H. 1) presents a study of ten cases of tubal pregnancy seen at Martin's private hospital in Berlin within the last three years. The presence of chorial structures was demonstrated in all, decidua in eight. The location of the fruit sac was five times in the right tube and five times in the left. The arrest of the pregnancy as indicated by the first occurrence of hæmorrhage took place in every case before the end of the second month. With reference to the question of diagnosis, the author concludes that a firmly organized blood clot in the tube makes the diagnosis of tubal pregnancy practically certain.

Intraperitoneal hæmatocoele in tubal gestation may occur from extrusion of the ovum through the ostium abdominale as well as by rupture.

The demonstration of decidual cells is not essential (as claimed by Ruge) to the diagnosis of tubal pregnancy.

Chorial villi can be made out in all cases of tubal pregnancy in the first months.

TREATMENT OF POST-PARTUM HÆMORRHAGE.

Kustner (*Deutsch. Med. Wochenschr.*, No. 1). In hæmorrhage from rupture of the perineum, vagina or cervix close the lacerations by suture. Suture of the cervix may be difficult when the vaginal portion cannot be easily drawn down to the vulva, but may be accomplished with competent assistance.

Post-partum hæmorrhage from atony of the uterus may generally be prevented by a more gradual delivery. For the treatment of atonic hæmorrhage the author endorses the tampon of iodoform gauze as advocated by Dürhssen. He has practised this method successfully in eight cases. It has proved equally satisfactory in atonic hæmorrhage from cervical lacerations and in bleeding from degenerate uterine vessels.

QUININE AND PREGNANCY.

Merz (*Arch. d'obstet. et de gyn.*, Aug. 25, 1890) holds that quinine may cause abortion in the first three months of pregnancy; that it may precipitate labor in the last two. In the intervening period it is less liable to do harm. Quinine therefore should be exhibited with caution, he thinks, during the early months of pregnancy.

THE COUVEUSE.

The "N. Y. Med. Record" for June 21, 1890, describes an incubator modelled after the perfected Parisian apparatus and obtainable from Messrs. Codman and Shurtleff, of Boston. The temperature recommended is 85 F. The use of the incubator may be continued for two weeks or a month and the infant may occupy it during the night for some time longer.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M.D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

ON GOUT.

Sir Dyce Duckworth, of St. Bartholomew's Hospital, London, has contributed an exhaustive treatise on the above subject. The author believes in the various diatheses, the study of which will enable a better treatment for the diseases belonging to each. In keeping with this idea, gout is regarded as a constitutional disease, the manifestations of which

are not always similar. When acute, it is characterized by a specific inflammation, affecting most frequently the articular system. Suppuration is of rare occurrence. The disease may come either by inheritance or acquisition. The causation of gout is regarded by the author as twofold, being a "neuro-humoral disorder." The neurotic element is a most important factor, having for its origin the premises that various organs, tissues, and structures have a relation to certain central cells in the medulla oblongata.

Many of the peculiar conditions of neurotic diseases are seen in gout. Some of these are: Transmission by heredity, the feature of periodicity, the tendency to come in paroxysms, the relation of the one disease to various other neuroses, and excessive activity of the nervous system. With the diathesis is associated the toxic influence of abnormal states of the blood. The latter excites the former, causing changes in nerve-centres from which result the gouty attack. Many attacks of gout come when the nervous system is in a depressed condition, generally from great activity. A sudden shock may act as a cause. There are certain characteristics which are indicative of a gouty nature. Among these are: The large head, the thick hair, early grayness, large full veins, long uvula, soft skin, thickened extremity of nose, and lineated brittle nails. An absolute evidence of gouty disease may be obtained from the presence in the *tissues* of the uratic salts. Uric acid is found in excess in the body. *This in itself is not sufficient to cause gout.* Other conditions must be present. Nor does the author say that high living alone is always productive of gout. Excessive formation of uric acid is sometimes balanced by a more marked excretion. Changes in tissue, feebleness of circulation (capillary), and imperfect action in the digestive system may be found to be present when gouty manifestations occur.

A valuable statement is made that gouty deposit never occurs except where tissue-degeneration has commenced. The author believes that gout bears a relation to the entire body ("Totum corpus est podagra"). When the body becomes distinctly gouty there may be found deposit of urate of soda in many joints; deposit of uric acid in the respiratory tract; affections of the pleura. Abnormal changes in the stomach are rare. Hæmorrhagic spots with destruction of the membrane have been noted in a few cases of gout in the stomach. Gastric pain must not be mistaken for angina pectoris.

Various affections of the skin are noted. In one-third of the author's cases, tophi were found in some portion of the external ear. These chalky deposits are sometimes found on the lids. The contents may be tested chemically, and such test is an aid in diagnosis. Traumatism only rarely influences the location of tophi. The morbid anatomy of

the kidney is generally a part of gout. The author objects to a too free use of the term "gouty kidney," and believes that similar changes are found where no gout is present. In only individuals of the most vigorous constitution do the kidneys escape affection. Induration, diminution in size, redness, thickness and adherence of the capsule, rough surface, cysts, granular condition, fat in the pelvis, pyramids not distinct, and wasting of the cortex are all found in these kidneys. Well-marked changes occur in the arterial system. Pericarditis may be found. Ventricular hypertrophy goes with the renal change. Dilatation and degeneration may exist. The weight is increased. Changes in the right heart are subsequent to pulmonary changes (emphysema and bronchitis). The blood of gout contains more uric acid; there is no corpuscular degeneration.

A number of chapters are given up to the consideration of the relation of gout to other diseased conditions. Mention will be made here only of the existence of traumatism in producing gout. Cases are recorded where persons in seemingly perfect health suffered from an attack of gout after receiving some injury. A fall from a height, sprains, surgical operations, vaccination or pulling of a tooth may precipitate an attack. The author quotes Paget in saying that when an injured joint of an adult does not make a due recovery, gout may be suspected.

With chapter twelve commences a description of the premonitory symptoms of gout. In the earlier attacks there is little to give indication of the coming attack. In later attacks there are prodromata. Among these are dyspepsia, hepatic fulness, pyrosis, flatulence, headache, urine loaded with lithates, cardiac irregularity and palpitation, arterial fulness and tenseness, mental depression, neuralgia, various deep-seated pains, constipation. With these conditions present slight causes may bring on the acute manifestations. These may be traumatism, coryza, sneezing, excessive venery, changes of air or diet, checking of perspiration, errors in diet, prolonged mental study. The author gives a description of an acute attack. In his own series of cases the maximum temperature reached was 102.2° . *The temperature of the diseased joint is subnormal.* It is interesting to note that a puffiness or œdema of the subjacent tissue appears after a varying length of time, and with this the pain begins to subside.

Considerable space is given to metastatic gout. After passing away from the joint some other part of the body is attacked. This may be the heart, brain, stomach, intestines or bladder. The cardiac attack may result in syncope, or, should the patient survive the acute attack, disturbances of circulation will last for some time. The attack in the stomach may be either spasmodic or inflammatory in its character.

The author condemns the use of severe antiphlogistic measures. Rest, position, and certain local remedies are recommended. The affected part may be covered by soft wool. Lotions of whisky and water, ether and water, some liquid preparation of opium, ointments of atropine, iodoform, oil of peppermint, cocaine or poultices may be used locally. Strong purgatives are harmful. When the attack has declared itself, colchicum may be used. This may be given alone or in combination with an alkali. The salicylates may be used. They are indicated in young subjects, but are considered inferior to colchicum "to relieve the urgent symptoms." Alkalies are valuable. The diet must vary according to the nature of the attack and the patient's general strength. The treatment for irregular gout, for the intervals between the attacks, and many rules for living are duly considered. The last chapter is devoted to the prognosis of gout, in which the author states that each prognosis must be given for the individual. There are, however, certain conditions which are of aid in rendering a prognosis. Among these are diet, habits of exercise, control of the appetites, family history, the presence of other diatheses, and the general organic state. With ancestors who have had vigorous constitutions the tendency to old age is not greatly impaired.

The author describes a most important condition in recording cases where gout has occurred in paralyzed limbs. In one case of left hemiplegia gout came in the wrist; in another, the right great toe-joint was affected; in a third, similar conditions were present; in another, the left side was the seat of the disorder. Some of these patients had had attacks of gout previously to the cerebral hæmorrhage. The descriptions of these cases are valuable hints, and should be taken into consideration in watching all cases of paralysis, in which abnormal conditions of the joints sometimes appear.

This work on gout, which has here been considered, deserves to be regarded as an authority on its subject. It is very valuable also in describing the relation of gout to other conditions, and many useful hints are given which must certainly be of aid in the differential diagnosis of obscure cases. The work is dogmatic, but unlike most books of similar character, it is free from contradiction. We have been able to discover but one obscure chapter. This is that devoted to "rheumatic gout," the exact meaning of which is not clear. Otherwise the book is without serious fault, and will amply repay careful study, and is also an excellent book of reference.

PREVENTIVE MEDICINE.

BY E. H. BARTLEY M.D.,

Professor of Chemistry and Toxicology, and Lecturer on Diseases of Children, Long Island College Hospital.

DIPHTHERIA IN THE LOWER ANIMALS.

In a paper read by Dr. Klein before the Royal Society of London, he described a peculiar pulmonary disease among cats, which seemed to occur coincidently with diphtheria in the children in the same house where the cat was kept. The disease in the cat was described as an acute lung trouble. The cats became quiet, refused food, and seemed unable to swallow. The animals became either emaciated and weak, and finally died, or they gradually recovered. The lungs were affected with broncho-pneumonia, and the kidneys in most of the cases were also affected, the entire cortex being in a state of fatty degeneration, giving the appearance of the large white kidney. The disease in the cat was sometimes preceded and sometimes followed by diphtheria in a child or children in the same house. Suspecting that the disease might be a form of diphtheria, Dr. Klein performed subcutaneous injections upon healthy cats, using bits of diphtheritic membrane from human subjects, and also with cultures of the bacillus.

A local diphtheritic tumor was produced at the seat of inoculation, and where the animal lived a week or more a broncho-pneumonia, with large white kidneys, was invariably found post mortem. The bacilli were found in the local tumor, but not in the lungs, blood, or other internal organs. This result is the same as that obtained in guinea-pigs. The same, or a similar disease, was also produced by injecting a broth culture into the trachea of other cats. The post-mortem appearances showed the same changes as in the above cases, and corresponded with those found in the spontaneous cases. The author concludes that diphtheria is communicable from cats to the human subject and *vice versa*, and that the seat of the disease in the cat is in the lungs and bronchi.

Dr. Klein also stated that he had made some experiments on milch cows, in somewhat the same manner. Broth cultures of the bacillus, derived from diphtheritic membrane, were injected under the skin of the left shoulder. On the second and third days there appeared a soft, tender swelling at the seat of the inoculation, which reached its maximum size in about a week, when it grew smaller and firmer. The temperature was elevated on the second and third days, the cows refused food for a day or two, and then became apparently normal. The animals had a slight cough, beginning on the eighth to the tenth

day, which gradually increased. One of the two inoculated left off feeding on the twelfth day, grew thin, and died on the fifteenth day. The second animal was very ill on the twenty-fifth day, when it was killed.

In both animals there appeared, on the fifth day, on the skin, red raised papules, which became vesicles and finally pustules, and then formed a brown scab with a sore underneath. The whole period from the appearance of the papule until the dropping off of the scab was from five to seven days. The eruption appeared in crops, amounting to twenty-four on the udder, and four on the teats in one case, and a less number in the other.

The milk on the fifth day was found to contain the diphtheria bacillus.

The presence of the bacillus was demonstrated in the eruption on the udder, showing that, in the cow, the bacillus passes from the seat of the inoculation, while in the cat and guinea-pig this does not take place. Two calves were inoculated with matter from the vesicles on the udder of one of the cows. The calves had the same train of symptoms, viz.: the eruption, severe broncho-pneumonia, and fatty degeneration of the cortex of the kidneys. It appears, then, from these observations that a definite disease can be produced in the cow by the diphtheria bacillus, consisting of a diphtheritic tumor at the seat of inoculation with copious multiplication of the bacilli, a severe broncho-pneumonia, a vesiculo-pustular eruption on the udders, and fatty degeneration of the kidney. Culture experiments proved the identity of the bacilli found in the tumor, eruption and milk, with diphtheria bacilli obtained from the human subject.

On the fifth day after the inoculation, two cats received a part of the milk from one of the cows. One or two days afterward both cats sickened, and in a few days died with the symptoms of the natural cat-diphtheria. Several other cats became sick and died with the same disease.

Dr. Klein thinks the existence of this disease may account for certain epidemics of diphtheria that have been traced to the milk supply, but without any other source of contamination with the diphtheritic poison.

Such investigations make it more evident than ever before that a careful inspection of milch cows is of great importance. Until such careful inspection is secured, only sterilized milk should be used.

DIPHThERIA IN PIGEONS.

It is known that doves are often subjects of diphtheria. Babes and Piscarin, of Bucarest, have published the results of their studies of

several outbreaks of the disease among pigeons, in "Zeit. f. Hygiene," vol. viii., part 3. They arrive at the conclusion that the cause of the disease is the bacillus of Loeffler and not, as has been stated by other observers, a flagellate organism.

They conclude, therefore, that the disease is caused by the same organism as diphtheria in the human subject.

They found it possible to produce diphtheria in birds whose throats had been scarified, by the application of pure cultures of Loeffler's bacillus. In rare cases they observed paralysis in those which survived the attack of diphtheria. In all respects the produced disease seemed identical with the spontaneous affection.

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Adjunct Professor of Histology and Pathological Anatomy, Long Island College Hospital; Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

I. ROSIN, ON PLASMODIUM MALARIE. 2. ROSENBACH, RELATION OF THE GRANULES IN THE MALARIAL PLASMODIA. 3. PLEHN, CONTRIBUTION TO TEACHINGS ON MALARIAL INFECTION.

(Centralblatt f. d. med. Wissenschaft, No. 36, Sept. 6, 1890). R—— records a case of malarial fever in which examination of the blood revealed five forms of malarial parasites. 1. Homogeneous non-granular bodies inside of the red blood corpuscles. 2. Granular bodies inside the red blood cells. 3. Homogeneous bodies, and four granular bodies outside the red blood corpuscles. 5. Segmenting, or rosette form. (Really these five forms are only the two forms: the amœboid and the rosette forms, Laveran).

The experiment was conducted with a homogeneous immersion, and Abbe's illuminator. The blood, which was removed with lancet puncture, was examined either fresh or after fixing over the flame, after previous staining for two hours with concentrated aqueous solution of methyl blue, and imbedding in gum arabic solution.

It is to be concluded from this description that it is not at first easy to see the parasite. The observer at first sees red blood corpuscles which are lighter than the others, and in which are collections of brown red granules. With more exact observation these granules are discovered to be in motion, and lie inside of an irregular body of various shape and size, which has the power of amœboid motion and lies in

the red blood corpuscle. Once being accustomed to these appearances, many red corpuscles are found to contain the same organism, but without the granules; and that granular and non-granular bodies are also to be found outside of the red blood cells. R—— did not see either flagellated or half-moon shaped bodies. On the contrary, he found irregularly bordered bodies in pretty considerable numbers, 2 to 5 times larger than the red blood cells with amœboid motion, and containing large brown granules. He regards these as phagocytes laden with malarial parasites. The patient recovered without medicine.

(2) The granules residing in the malarial parasites and which were first discovered by their presence in the red blood corpuscles, were always described by the earlier authors as a black pigment collection. In Rosin's observation the black granules were absent, being replaced by the brown-red ones described, or brilliant whitish-yellow ones, sometimes even greenish. Rosin connects this with the unusually light nature of the case described and is inclined to think this absence of the black granules, and presence of the brown-red ones to be a good sign; as the destruction of hæmoglobin which gives origin to the granules, is not as intense where the lighter ones occur, probably either because of diminished virulence of the parasites, or greater resistance of the red blood corpuscles.

The author regards the results of culture experiments on artificial culture media as not entirely meaningless. He inoculated "cooked-out" blood with garden earth, also urine, and ascitic fluid sterilized by long cooking. In the first two he found nothing but blood containing dead malarial organisms; in the third, however, after some days he found parasites in lively motion, which showed no form changes and no contractility.

(3) Plehn reports three cases of recurrent malaria acquired in various localities in Germany.

At first the parasites were visible to him only in the third of the three cases reported, but after becoming more accustomed to their appearance, he was able to find them in the second, but not the first case. He did not see either the sickle or rosette forms. He experimented with colored and uncolored specimens, using for the colored ones a modified czenzinokisch eosin-methyl blue solution. The author is opposed to the use of the term *Plasmodium*, agreeing in this with Laveran. By plasmodium the botanists mean the fusion of a number of "schleimpilz" individuals into a varyingly large plate-form plasma mass. Opposed to the formation of such a mass are the relatively constant form and size of the malarial plasmodium.

The balance of observation goes to show, that the malarial para-

sites belong, not to the pilz, but to the protozoar, the coccidian or gregarinen. The French, with Laveran, use the term "Hamatozen." (Scheurben).

LANE. TWO CASES OF SUBDURAL ABSCESS RESULTING FROM DISEASES OF THE ANTRUM AND MIDDLE EAR.

(Brit. Med. Jour., June 7, 1890, p. 1301). The two abscesses resulted from otitis media, and are remarkable for the fact that while the transverse sinus formed for a long time a part of the abscess wall, no thrombosis occurred, and also that no optic neuritis occurred.

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital.

PARALYSIS OF ACCOMMODATION FOLLOWING MEAT POISONING.

Groenouw (Kl. Monatsbl. f. Aug., May, 1890, p. 166), publishes the details of five cases of paralysis of accommodation due to the ingestion of tainted meat, in three of which the etiology was unusually clear. In these three cases the toxic agent was a ptomaine rather than micro-organisms or trichinae, as was shown by microscopical examination and by experiments on animals. Only when a certain degree of poisoning occurred was there mydriasis, weaker action of the poison producing only paralysis of accommodation. In diphtheritic paralysis the pupillary reaction is, as a rule, preserved. Atropine, on the other hand, acts primarily on the pupil. As in the toxic paralysis under consideration mydriasis is only present when the paralysis of accommodation has passed certain limits, the relation of the size of the pupil to the range of accommodation is not without a certain diagnostic value, marked mydriasis with slight weakening of accommodation indicating atropine. It is quite possible that some of the obscure cases of accommodative weakness may be due to the toxic influence of food, perhaps without notable disturbance of digestion.

OPERATIVE TREATMENT OF VITREOUS OPACITIES.

In the issue of this Journal for December, 1888, reference was made to a report of seventeen cases in which Bull had operated for membranous opacities in the vitreous. Bull now (Oph. Rev., July, 1890, p. 161) gives the results obtained in a further series of twelve cases, which strengthen his belief in the value of this method of treatment,

notable improvement being obtained in all but one. He has made no special change in the technique of the operation.

IRIDESCENT VISION IN GLAUCOMA.

Collins (Oph. Rev., July, 1890, p. 196) thinks the appearance of "rainbows" in glaucoma is due to slight "steaminess" of the corneal epithelium. The more pronounced opacity seen in the later stages of glaucoma and that due to the prolonged use of cocaine do not usually cause "rainbows," probably because the epithelial changes are too gross. Stretching of the cornea from increased intraocular tension would tend primarily to diminish the lymph streams circulating through it, and this would result in slight drying of the surface epithelium with possibly some shrinking of the cells and the formation of intercellular spaces.

OCULAR DISTURBANCES IN MALARIA.

Sulzer (Kl. Monatsbl. f. Aug., July, 1890, p. 259) after commenting on the relative scarcity of references to this subject in the ordinary text-books, reviews the literature with moderate completeness. In his paper, however, he only describes the affections of the deeper parts of the eye, omitting those of the eye muscles and anterior portion of the globe as well as those due to malarial albuminuria. He thus groups his cases:

In chronic malarial affection:

1. Chronic optic neuritis, associated in severe cases with melanosis of the optic papilla.
2. Diffuse infiltration of the vitreous.
3. Numerous small hæmorrhages in the retinal periphery. Punctate hæmorrhages were invariably found microscopically in the eyes of those who died from malarial cachexia.
4. Sudden incurable blindness, probably due to central hæmorrhage or embolus.

In acute malarial fever:

1. Periodic amblyopia of varying degree without ophthalmoscopic change, sometimes amounting to blindness of several days' duration, with complete recovery after use of quinine.
2. Marked hyperæmia (especially venous) of papilla and retina, with loss of retinal reflex and a predisposition to macular disturbances in consequence of reflected sunlight, these disturbances never occurring, according to Sulzer, in normal eyes.
3. Extensive hæmorrhages in the region of the disc and macula.

Sulzer's own experience was obtained in cases coming from the East Indies. The majority were of chronic neuritis, due to malarial

cachexia with enlarged spleen, irregular periodic temperature variations, neuralgia, etc. Peculiar were the alterations in visual acuity, at one time good and then perhaps falling within a few days, only to again improve. Both eyes were usually affected, the visual field normal or showing slight concentric contraction, the color sense normal. In many cases there was hemeralopia, sometimes photophobia as well. The dark-reddish gray color of the papilla is characteristic, and is due, according to Poncet, to pigmented giant cells in the dilated capillaries of the disc. This affection of the optic nerve is very amenable to treatment, but apt to recur if exposure to malarial infection be not avoided. Partial nerve atrophy resulted, however, in eight per cent. of Sulzer's cases.

The second variety of cases observed was of diffuse infiltration of the vitreous. This seems at least liable to lead to permanent visual impairment with possible nerve atrophy.

The third variety of cases seen by Sulzer was a consequence of acute malarial infection, and more numerous than that last described. During the fever periods these patients complained of burning in the eyes, light flashes and photophobia. Ophthalmoscopically, both during the attack and the intermission, the optic disc and retina showed marked hyperæmia (chiefly venous). The retina appeared without reflex and as if covered with a fine mist. The frequency of macular affections due to reflected sunlight called Sulzer's attention to the above changes, occurring as they did exclusively in soldiers suffering from tertian who had been on duty during the febrile intermission. The macular changes themselves were in no way different ophthalmoscopically from the severe cases due to direct observation of the sun. There were also the changes in the retina above alluded to in connection with chronic malaria, hæmorrhages, etc., in about one-fifth of the cases suffering from malaria.

GYNÆCOLOGY.

BY WALTER B. CHASE, M.D.

PARTIAL REMOVAL OF DISEASED OVARIES.

One view of the conflicting theories concerning the advisability of partial or entire removal of an ovary, is set forth by Dr. Martin as published in Volkmann's "*Klinischer Vorträge*," in which, from his own experience, he arrives at the following conclusion, viz. : "Patients recover perfectly after partial removal of ovaries for localized chronic in-

flammatory changes, hydrops folliculi and öophoritis. Recovery is also complete in most cases after the resection of obstructed and otherwise diseased tubes. The after-histories of seventeen patients operated upon by Dr. Martin prove that women with resected ovaries and tubes are not more exposed than other women to further disease of parts left behind. Menstruation continued in all cases, and some patients conceived."

Dr. Martin states that "in 1864, Sir Spencer Wells emptied some dropsical follicles in one ovary of a young girl, having just removed its fellow. The girl afterward married and had children." (*British Medical Journal*, Aug. 9, 1890.)

DANGER OF SYPHILITIC INFECTION.

The danger of infection by the gynæcologist is discussed in the *Annals of Gynæcology and Pædology*, March, 1890, by Wm. Gooddell.

After referring to several conditions under which gynæcologists have controlled the disease, he says: "The knowledge of these facts have made me keenly alive to the danger which physicians in general and gynæcologists especially, incur in the examination and in the delivery of women.

"It has also made me very careful to see that all my every-day instruments are kept scrupulously clean, for there is no doubt careless physicians have unwittingly inoculated their patients by their instruments and especially by the speculum."

CONCEPTION WITH UNRUPTURED HYMEN.

W. Macfie Campbell, in a paper read before the Edinburgh Obstetrical Society, gives an account of a case coming under his own observation where pregnancy was present and the hymen perfect. He quotes the experience of Brown, of Vienna, who draws the following brief conclusions:

- 1st. That an unruptured hymen is no proof of virginity.
- 2d. An individual may exist as a virgin in the anatomical though not in the gynæcological sense.
- 3d. Pregnancy is possible without penetration. (*Edinburgh Medical Journal*, Sept. 1890.)

[Every observer of any considerable number of unmarried females, of the class whose purity is unsuspected, must have noticed in quite a percentage of cases, that only the remnants of the hymen were present, and that occasionally in ladies many years married the hymen was perfect, being dilatable without rupture, as was demonstrated by digital or speculum examination.—W. B. C.]

OUTERBRIDGE'S INSTRUMENT FOR THE CURE OF STERILITY WHEN DUE TO
FLEXION OR STENOSIS OF THE CERVIX.

In a discussion of the merits of this device in the Chicago Obstetrical Society, Nov., 1889, appearing in the American Journal of Obstetrics, June, 1890, no positive cures were reported.

[Inquiries from other sources leave the subject *sub judice*.—
W. B. C.]

STERILITY.

Lier and Ascher (Zeitschrift f. Geburtshülfe u. Gynäkologie, Bd. 17, Heft 2), after an analysis of 200 cases selected from 2,500 married women, all of whom had been married at least one year and a half. 76 of 227 appeared on account of sterility. In 70 per cent. of the cases, the trouble was with the husbands; 151 women applied for treatment on account of pelvic disease, 79 of whom were suffering gonorrhœal infection. Out of 86 husbands, 21 had azoöspemia. In a further analysis, in 227 cases of sterility, 60 per cent. were due to the male. An additional summary of two series shows, out of 227 cases of sterility, nearly 60 per cent. were due to the male. Also 424 cases inquired into revealed the fact that 40 per cent. were due to azoöspemia or gonorrhœa. It is therefore apparent gonorrhœa bears a very important relation to vital statistics.

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M. D.,

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital; Instructor in Diseases of the Throat and Nose, New York Post-Graduate Medical School and Hospital.

RADICAL OPERATIONS FOR THE CURE OF INTRINSIC CARCINOMA OF THE
LARYNX.

H. T. Butlin (Brit. Med. Jour., Aug. 23, 1890). The term intrinsic is applied to carcinomas arising from the ventricular bands, the ventricle, the true cords, and parts below the cords. Extrinsic carcinomas are those originating in epiglottis, ary-epiglottic folds, the intra-arytenoid fold, and pyriform sinus. The intrinsic variety do not, as a rule, affect the lymphatic glands: the extrinsic do, at an early period, and constitute, therefore, the more dangerous disease, running a rapid course, and seldom checked or cured by an operation. The operation of partial or complete excision of the larynx should be performed only in intrinsic carcinoma of the larynx.

Statistics of 102 operations for intrinsic carcinoma were reported; these included 28 cases of thyrotomy, 23 of partial and 51 of complete

excision of the larynx. There were 26 fatal cases in 102 operations. The excessive mortality was due to the special causes of death associated with these operations, namely, affections of the lungs and septic poisoning. The two main obstacles to contend with in the management of patients having undergone these radical operations are :

1. The difficulty of keeping the wound aseptic.
2. The difficulty of preventing the entrance of fluids into the air-passages.

The latter is the greater danger. The author treats the majority of his patients without tracheotomy-tube or tampon, after removal of first tampon-tube within twenty-four hours of the operation, by dusting the wound with iodoform and borax and placing over the wound iodoform gauze ; patient to be placed upon side, the head on one small pillow, thus allowing wound in a measure to be dependent.

Of the 102 cases, 15 patients were alive and free from disease, or dead of some other malady than cancer, at periods extending from three to twenty years after the last operation.

In choosing the operation upon individual cases, the author urges the smallest operation consistent with the widest excision of the disease and a considerable area of surrounding tissue.

The larynx should be widely opened and thoroughly examined. The disease generally occupies a larger area than is apparent in laryngoscopic examination. The removal of the cartilages, forming the framework of the larynx in most cases of intrinsic carcinoma, is not necessary ; if the disease has penetrated and laid bare these structures, it is sufficient to expose them and to cut away or scrape with a Volkmann's spoon all of the softened parts.

Carcinoma with great difficulty make their way into cartilage, and the chances of recurrence in these hard parts are infinitely less than in the soft tissues.

NOTE ON THE PROCESSES TAKING PLACE IN DIPHTHERITIC MEMBRANE.

M. Armand Ruffer (*Brit. Med. Jour.*, July 26, 1890). The bacillus of diphtheria, first investigated by Klebs in 1883, is found in the false membranes only, and not in the organs or blood of persons who die from the disease. After introducing a pure culture of diphtheritic bacillus into the veins of a rabbit, it was impossible to find the specific organisms in the blood or organs.

After inoculating guinea-pigs subcutaneously, a marked œdema was found at point of introduction, and the number of bacilli increased up to eighth hour after inoculation ; they then gradually decreased in number until the animal died.

The blood and organs of these animals were found to be sterile.

It is probable, therefore, that the microbes, in the effort to penetrate the living tissues, are killed if forcibly introduced into the system. There is evidence that such a result takes place in the diphtheritic membrane of man. The pharynx and larynx of patients dead from diphtheria were perfectly hardened in alcohol, embedded in paraffin, cut, and stained with alum-carmin, and afterward with gentian-violet. In these specimens it was possible to study the position of the bacilli with relation to the surrounding structures.

A section of bronchus, where the disease had passed into the lungs, showed, in the free surface of the membrane, next the lumen of the tube, an enormous number of specific bacilli, lying mostly in the exudation. In the deeper layers of the false membrane the number of micro-organisms is exceedingly small, and not a single bacillus can be found in the mucous or sub-mucous tissues.

Conclusions from observations :

1. The diphtheritic bacilli are present in most superficial part of membrane only, well within reach of medicinal agents.
2. In the diphtheritic membrane there is an active contest between the amœboid cells in the membrane and the micro-organisms.
3. The reason why the bacilli do not penetrate the living tissues is that they are arrested and antagonized by the amœboid cells lying in the network of fibrin that constitutes the diphtheritic membrane.

MEDICAL JURISPRUDENCE.

THE LAW AND THE DOCTORS.—AND NOW THE DRUGGISTS.

BY SIDNEY V. LOWELL.

The last volume of the Law Reports of the State of Tennessee contains a report of the case of Demoville & Co. against Davidson County. It seems that at the session of the Legislature of that State in 1887, a very curiously worded Act was passed, in relation to druggists who had sold liquor which was not used medicinally, and to relieve those who had honestly sold, as for such use, from liability for tax as liquor dealers. We give the first section entire :

SECTION 1.—Be it enacted by the General Assembly of the State of Tennessee, that all druggists in this State who have made themselves liable for taxes as liquor dealers under the Revenue laws, * * * making them liquor dealers, and who were not in fact using the drug-

gist's license as a blind, but were in good faith only selling the prohibited articles as medicine, be and they are hereby relieved of all liability. * * *

The plaintiffs, it seems, being druggists, had been mulcted in damages for selling liquor—as being liquor-dealers, the alcoholic fluid sold by them having been used as a beverage. To obtain relief from the judgments obtained by the Government of the County where they resided they had, perhaps with the aid of others similarly situated, obtained the passage of the Act cited.

The Attorney-General of the State, Mr. "Attorney-General Pickle," refused to accept the statute as being "law," and took high constitutional ground against it. He claimed especially that it was "class legislation;" that is, legislation in aid of particular individuals, rather than for the benefit of the community, and as such obnoxious to a provision of the Constitution of Tennessee, directly negating legislation, granting to any individuals especial rights or exemptions.

He claimed that all liquor dealers constitute a class, and that the Act singled out one portion of that class, and extended relief to them alone.

The Court held, however, that druggists are not liquor dealers in any true sense, and that they constituted a natural and not an arbitrary class of the community, and legislation of which all of them might have the benefit, was not obnoxious to the Constitution.

General Pickle also urged that the statute was invalid as being retrospective, and that the Legislature could not give away the taxes earned by the State. The Court made a rather fine distinction as to this, and decided that these taxes were "privilege taxes," (an expression not common in New York), as distinguished from "property taxation," and held that the Legislature could waive them. Likewise overruling the objection that the Legislature could not interfere with the course of justice as to judgments already inflicted.

Our friends, the druggists, went free, but it was a close call, and must have cost them in various ways a pretty penny.

There was once great abuse by certain druggists of their privileges in the same way in this city. This was reprobated by all good physicians, and their establishments shunned. While a few made money, others were ruined.

It may be that our Tennessee friends will be yet called to account as to whether in the racy language of the Act, they were not using their license "as a blind!" It would be safe advice, perhaps, to all in the business, to make no sales of intoxicating liquors except on a physician's prescription. There is no other safe course.

CORRESPONDENCE.

FOR THE RELIEF OF THE POOR CRIPPLES OF BROOKLYN.

To the Editors of the Brooklyn Medical Journal.

As shown by the annual reports, *hundreds* of the poor crippled children of Brooklyn are every year taken to the out-door departments of the orthopædic institutions of New York. These cases, under the most favorable circumstances, require for a term of years detail treatment only possible at an especially equipped establishment. The parents, at first faithful in attendance, in many cases soon become careless, or find themselves unable to lose the frequent day's work for the purpose of taking the journey and awaiting their turns at the crowded clinics. Others cannot leave their families. Some of the patients cannot endure the trip. Thus a large proportion fail to receive the treatment which would restore them to health, and much suffering and deformity and not a few deaths result. This might have been prevented had the means of relief been more available. In view of these facts, the trustees of the Dispensary of St. Mary's Hospital have established a Department of Orthopædic Surgery and Diseases of the Bones and Joints. It has now been in successful operation for more than a year. Facilities have been provided for the careful examination and record of cases and for the application of the necessary apparatus. The patient is not turned over to the tender mercies of an instrument maker, but the instruments are made according to measures, patterns, sketches, and directions furnished by the surgeons who personally adjust the appliances and regulate their action. The fundamental working principle is that a brace is simply a tool, and that it is the skill with which it is used that determines the result. Shop facilities are at hand for the immediate repair of apparatus. The greater number of the patients are children, but aid is extended to those of any age. Those who cannot be properly treated as out-patients are cared for in their homes. For those who cannot there secure the necessary local conditions, or who require operation or more constant supervision, beds are provided in the hospital. When a patient fails to report after some time, a visit is made to ascertain the cause of the neglect.

The Department is for the exclusive benefit of the poor, and the case of any patient apparently able to pay for treatment is investigated. The work is under the charge of an orthopædic surgeon who has for several years served on the staffs of the New York Orthopædic Dispen-

sary and Hospital, and the Hospital for the Relief of the Ruptured and Crippled, in New York. New patients, and applications for those unable to come, will be received at the Dispensary, 1205 St. Mark's Avenue, on Tuesdays, between two and three o'clock.

JAMES CLYNE,

Sec. of Board of Trustees of St. Mary's Hospital.

TREATMENT OF DYSENTERY.

To the Editors of the Brooklyn Medical Journal.

If I had been present at the April meeting of the Medical Society of the County of Kings—whose proceedings are reported in the October number of your Journal—I should have taken part in the discussion of Dr. Fairbairn's paper on the Treatment of Dysentery, and advocated a reliance upon the sulphate of magnesia, in small repeated doses, as the best method of treatment, giving better and prompter results than any other.

Of course, there are complications of dysentery which may require a modification of this course; and it would not meet all the indications presented by a case seen first at an advanced stage. But this is also true of irrigation. I am speaking of dysentery seen at the outset. A long experience has satisfied me that simple acute dysentery yields surely and promptly to the treatment by sulphate of magnesia, unaided by any other medicine. The characteristic symptoms are more speedily relieved, and convalescence is more rapid.

In a case quoted by Dr. Fairbairn, his patient was "convalescent in four days, and well in a week." If by this is meant that the bloody mucus had disappeared in four days, and no earlier, the result is not nearly as good as is obtained by the saline treatment. I give one drachm of sulphate of magnesia every four hours. If the treatment is begun on the first day of the disease, within the next twenty-four hours the pain and tenesmus have ceased, the blood and mucus have disappeared, the dejections have become watery and less frequent; and in another twenty-four hours the passages have ceased entirely. The success depends on the continued use of the salts—given at longer intervals after the change in the character of the evacuations—until the discharges cease altogether. There is occasionally a patient whose watery passages continue, and it becomes necessary to suspend the salts and give a sedative and astringent dose. But such a necessity is rare.

Absolute rest in bed, warm clothing of the bowels, and a bland diet, such as starch, are indispensable, whatever medicinal treatment is used. With the saline method, opiates are unnecessary; pain and tenderness are relieved in the first day.

I have employed this method exclusively for forty years in all cases of acute dysentery, and have rarely been obliged to modify it. In spite of it the dysentery continue, other measures may be required—such as turpentine, or calomel and opium. There is no fear of hurtful depletion, against which Dr. McCorkle warned us in the discussion of the paper; no risk of any such injury in the first two days of the disease; the evacuations usually cease soon after becoming watery, even though several more doses of the salts be administered at longer intervals.

The idea of irrigation is rational, and the results are good, as shown by Dr. Fairbairn and others. But if the effects of the saline treatment are equally good, it seems to be preferable, as less disturbing to the patient; and I believe that its results are even better.

There are many men who will be ready to second what I have claimed, who in different parts of the United States have adopted this plan of treatment. More than forty years ago I got the suggestion of it from Heberden's "Commentaries on the History and Cure of Disease," either directly, or through my friend, the late Dr. Charles E. Buckingham, in the chapter on "Dysentery." Heberden says: "The readiness with which the neutral salts (especially the cathartic salt) purge, their power of controlling and quieting the irregular motions of the bowels, and their aptness to stay on the stomach without being vomited up, made me conceive hopes that they would make a valuable addition to the anti-dysenteric medicines. At first I gave only one drachm. every six hours, which evidently soothed the pains very soon, and before it had any effect as a purge. In other cases larger quantities were given with the double good effect both of affording present ease, and afterwards of entirely removing, by effectual evacuations, the cause of the disorder."

Whether the medicine relieves the bowels by producing exosmosis from the congested tissues, as Golding Bird thought, or enters the circulation from the stomach, as Headland claims (from experiments), the relief comes from a prompt depletion of the mucous and submucous tissues, with incidently the removal of any fæcal accumulation.

In 1852, I contributed to the "Boston Medical and Surgical Journal" a paper on "The Treatment of Dysentery by Sulphate of Magnesia," and in 1861 I read another on the same subject to the Connecticut River Valley Medical Association, and printed it in the "Berkshire Medical Journal." Subsequent experience has fully confirmed my belief in this method.

WM. HENRY THAYER, M.D.

Brooklyn, Oct. 11, 1890.

THE

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ORIGINAL ARTICLES.

GALVANISM IN THE TREATMENT OF CORNEAL OPACITIES.

BY L. A. W. ALLEMAN, M.A., M.D.

(Concluded from page 733.)

I have also tabulated all but the longer cases, in order that the duration of treatment, progress, and result may be more readily seen.

CASE I.—E. C., male, aged nineteen. Patient at the N. Y. Eye and Ear Infirmary. Referred to me for treatment by Dr. Mittendorf, on December 13, 1888. The patient had probably suffered, when an infant, from ophthalmia neonotorum, which had left an opacity covering the lower two-thirds of the cornea. The eye deviated upward and inward. His vision in the affected eye was at that time $\frac{2}{200}$. I gave him an application of electricity, the negative pole applied to the cornea, using three cells for one minute. As this application was followed by no reaction, finding on December 15th vision slightly improved, I repeated the application, intending to somewhat increase the strength of the current. The battery had in the meantime been recharged, a fact of which I was uninformed, and I was very much surprised to discover a very peculiar appearance of the eye under the

electrode. The secretions in contact with the electrode had been decomposed by the current, and the small bubbles covering the surface of the cornea gave it the appearance of having been severely burned by the electrode.

This very forcibly impressed upon me the danger of using a current in direct contact with the cornea without a milliampèremeter. Fortunately, in this case, no serious harm was done; the cornea had been slightly burned, and became a little more opaque at one point. Some inflammatory reaction followed, which yielded readily to atropine, and the patient's vision very rapidly improved; vision of $\frac{10}{200}$ being obtained. On January 23d, 1889, when the applications were again resumed. By February 9th, vision was improved to $\frac{20}{200}$. After two more applications vision of $\frac{20}{200}$ and J. 9 was obtained, which was not improved by March 16th. I then concluded that the eye was amblyopic, and that no further improvement would be obtained, and treatment was discontinued.

There was a marked improvement in the appearance of the cornea, which, after the inflammation following the second application had subsided, was found to have cleared most remarkably, and continued to improve while under observation.

When last seen very little opacity was visible.

CASE II.—Mrs. M. H., patient at the N. Y. Eye and Ear Infirmary, also referred by Dr. Mittendorf. Three months before, she had suffered from suppurative keratitis. It was then two months since all signs of irritation had disappeared. She had then a slight cloud extending over the lower two-thirds of the cornea; vision = $\frac{20}{200}$. On December 18, 1888, she was given $\frac{1}{2}$ m. a. for one minute. This application was followed by only a very slight reaction. On December 20th, vision = $\frac{20}{100}$; $\frac{1}{2}$ m. a. was given. On December 22d, vision = $\frac{20}{50}$; the application was repeated, but the patient was unwilling to return for treatment, as she lived out of the city, alleging, moreover, that her vision was now sufficiently good for all her requirements. The opacity was much less noticeable than before the treatment was instituted, and the eye had suffered in no way from the application, which fact is of interest, as the case had been one showing lack of nutrition.

I wish here to note that the visual records in Case I., up to January 23d, and in Case II., were made at the N. Y. Eye and Ear Infirmary, without artificial illumination, and that the distances were not accurately measured in each case, as in all subsequent records. The current strength in Case II. and in the first two applications of Case I. have been estimated—no milliampèremeter having been used.

CASE III.—J. M., male, aged thirty-six, suffered from interstitial keratitis some twenty years ago. At present there are corneal opacities of both eyes. The left eye alone was submitted to treatment. This was clouded with a dense opacity extending deeply into the substance of the cornea. An iridectomy had been performed without benefit: V. = fingers at 18".

On January 15, 1889, treatment was begun with $\frac{1}{4}$ m. a. for one and a half minutes, which was increased up to $\frac{1}{2}$ m. a. for three minutes by January 30th, when, after seven applications, V. = fingers at 54". I then found that with a + 12^D lens, the fellow eye, which had V. = $\frac{10}{200}$, could be greatly improved and so put the same correction on the left, which gave V. = $\frac{5}{200}$. The current was now increased up to $\frac{3}{4}$ m. a. for three minutes, and vision gradually, but only slightly improved, till on the last of February V. = $\frac{10}{200}$ was obtained with the correction. This was after nineteen applications. It was impossible for the patient to take the time necessary to continue the treatment, and it was consequently abandoned.

CASE IV.—Wm. B., aged twenty-eight, presented himself at my clinic at the Long Island College Dispensary, January 19, 1889, giving the following history:

Eighteen years before, while living in Ireland, he suffered from an inflammation of the left eye. Removing to this country while the eye was still inflamed, he presented himself at the N. Y. Eye and Ear Infirmary, where he underwent treatment and an operation. His symptoms were entirely relieved after the trouble had continued for some four months. Since which time the vision of his left eye had been very poor.

In November, 1888, he again visited the Infirmary, at which time I find his vision is recorded as $\frac{20}{200}$ in the left eye. $\frac{10}{200}$ under atropine. (Refraction 5 D. Hm.) He had, when first seen by me, a corneal macula occupying a little more than his pupillary area. His vision at this visit was $\frac{20}{200}$. (This improvement in vision as compared with his record, taken in November, 1888, is probably due to the fact that my test-letters were brightly illuminated.) I began treatment by the application of electricity on January 19th. The patient was phthisical, and it was impossible to use any but the feeblest currents, and even with $\frac{1}{4}$ m. a. I obtained on several occasions very annoying irritation.

I gave him, as a rule, $\frac{1}{4}$ m. a. for two minutes at each sitting, giving him in all ten treatments, vision being improved from $\frac{20}{100}$ to $\frac{20}{40}$. When I last saw him, no cloud could be observed upon the cornea, save by oblique illumination. The patient reported that his

vision had been greatly improved by the treatment, and that his left eye was now of the greatest assistance to him in his occupation.

This result is particularly gratifying when we consider the long duration of the opacity.

CASE V.—Mrs. M. M., aged fifty-four; referred by Doctor Mitten-dorf from his clinic at the N. Y. Eye and Ear Infirmary on January 25, 1889. In October, 1888, this patient had suffered from keratitis. All symptoms of irritation had been absent for six weeks at the time she first applied to me; but the scar had diminished only a little, and for some time past there had been no improvement in vision.

Treatment was begun with the application of $\frac{1}{4}$ m. a. for one minute, and at first, under such weak currents, the patient made very encouraging progress. Vision $\frac{1\frac{1}{2}}{200}$, which the patient possessed at the first treatment, was increased to $\frac{17}{200}$ by the last of February. I then endeavored to use stronger currents, but the result was not encouraging. The treatment was followed by annoying irritation, and had to be discontinued for a time. The patient was very irregular in her visits, and it was therefore not possible by frequent applications of weak currents to keep up the requisite state of stimulation to produce continuous absorption of the opacity.

The last record of vision = $\frac{23}{200}$ on July 5th.

CASE VI.—H. L., female, aged fifty, presented herself at the N. Y. Eye and Ear Infirmary, on January 25, 1889. Some two years before she had suffered from a corneal inflammation in the right eye, of very rapid development, which had at one time reduced V. to l. p. The inflammatory symptoms had subsided after about eight months, and there remained at the time of her first visit a dense white leucoma, entirely covering the lower $\frac{4}{5}$ of the cornea and extending well above the pupil at its maximum dilatation. So dense and complete was the scar that it was quite impossible to determine at this examination whether the pupil was obscured by any inflammatory deposits, although we thought this to be the case, and the margin of the pupil was seen to be very irregular when dilated with atropia.

By throwing the head well forward, V. = $\frac{4\frac{1}{2}}{200}$ could be obtained.

I secured an excellent photograph of this case, and trusted to it as a record for comparison; thinking that there was sufficient loss of transparency back of the cornea to preclude much visual improvement. This case has been most faithful in her attendance, and the result has been extremely satisfactory, but I have, unfortunately, no positive method of indicating the improvement. I have endeavored frequently to obtain a photograph which would show the improvement, but the

varying position of the corneal reflection, even in a good photograph, is so confusing, that the photographs are useless as records of results.

I have had this same difficulty in several other cases which I have not included in this report, as I had no means of indicating the improvement obtained.

In this case I gave, as a rule, three applications a week for the first six months, and since that time once a week.

The patient, on her own statement, is much improved. Vision is still about $\frac{6}{200}$, but she can now see with the head erect, the field is much enlarged, and as the fellow-eye is extremely near-sighted, this improvement is a great assistance to the patient. The iris can now be seen through any part of the scar, the density, even in the lower part, which was in the beginning almost as white as the sclera, is greatly lessened, and above, the cloud has entirely disappeared down to about the middle of the pupil. The capsular opacity can be clearly seen, and fully explains the lack of improvement in vision.

The case has progressed but slowly since treatment has been applied but once a week, but I can see that it does improve surely all the time.

CASE VII.—J. Q., male, presented himself at the N. Y. Eye and Ear Infirmary on February 3, 1889. On the 3d of July previous he had been struck in the eye by a piece of coal. An inflammation was set up which lasted for some two months, after which time the eye became quiet and annoyed the patient only by its defective vision. The eye was at this time free from all irritation. Vision $\frac{20}{200}$ with a mydriatic * $\frac{20}{70}$? Patient was referred to me by Dr. Derby for treatment. I gave him $\frac{1}{2}$ m. a. for one minute, and as this produced no disturbance, I repeated it on February 5th. On February 11th, $\frac{1}{2}$ m. a. for two minutes was given. On the 13th, vision was improved to $\frac{20}{100}$ +, and $\frac{1}{2}$ m. a. for three minutes was given; on the 19th, vision = $\frac{20}{70}$? the current at this sitting was increased to $\frac{3}{4}$ m. a. for three minutes. This treatment was repeated on the following day, and on February 25th vision $\frac{20}{50}$ was obtained; $\frac{3}{4}$ m. a. for four minutes was given at this time. The patient subsequently presented himself, but as I was prevented at this time by sickness from seeing him, I lost track of him, and no further record could be obtained.

CASE VIII.—M. J., female, aged sixteen, patient of Dr. Mittendorf, referred by him for treatment, on February 9, 1889. This patient had suffered from an ophthalmia in infancy, which had produced in the

* Homatropine.

right eye an adherent leucoma. The iris was adherent at the lower nasal side, drawing the pupil out to an oblong slit, which was covered by the leucoma, save at the extreme tip, where a little clear pupil was exposed and vision of $\frac{7}{200}$ (as taken by Dr. Mittendorf) was obtained by the patient when looking slightly down. The leucoma was very white and dense at the centre, and extended through the entire thickness of the cornea. The left eye was covered by a still larger leucoma, with closed pupil and only V. = l. p.

I endeavored to get a photograph of the case, but was prevented by the nystagmus which was present.

The vision was $\frac{1}{200}$ when I examined her under atropia. I did not wait till the effects of the atropia had passed away before beginning treatment, so have no record of the near vision till February 23d, when she could see J. 8 at 12. The patient improved quite rapidly at first, and by the last of March had V. = $\frac{20}{200}$. In this case I used stronger currents than in any of the preceding. I began with $\frac{1}{2}$ m. a. for three minutes, and soon increased it to $1\frac{1}{2}$ or 2 m. a. for three to four minutes, but little irritation followed the treatment. The patient was quite regular in attendance till the middle of April, when she informed me she had secured a place at service, her vision now being much improved.

She could see J. 5 at 12, and the leucoma was certainly reduced in size. She had, at this time, had fifteen applications.

After this I saw her at irregular intervals, and vision did not improve any further. I think, however, that the density of the leucoma was still further reduced while under treatment. She disappeared in July, and no further records were obtained.

CASE IX.—M. F., male. On May 14, 1889, patient presented himself at my clinic at the Long Island College Dispensary, giving the following history: Twenty-seven years ago he lost left eye from an injury. Two months before his visit to the dispensary right eye became inflamed and painful. He was treated at the Brooklyn Eye and Ear Infirmary, and made a good recovery. Present condition: Leucoma in right eye, covering the pupillary area. V. = $\frac{6}{200}$, with atropia, V. $\frac{20}{100}$, not improved with glasses. Pupil dilates under atropine irregularly.

He was given 1 m. a. for one minute, and no reaction following, the current was gradually increased, and vision improved by June 8th to $\frac{16}{200}$. The eye which had been somewhat irritated after treatment for a few preceding applications became quite severely inflamed at this time, and treatment had to be suspended. By August 5th vision had improved to $\frac{21}{100}$. Treatment was again resumed, and by August 27th

vision of $\frac{20}{70}$ was obtained. Wishing to determine whether or not the treatment was entirely responsible for the improvement, I suspended treatment from August 27th until October 20th, when I found V. = $\frac{20}{70}$, as on the last visit in August.

Treatment was again for some time discontinued, to be begun again the latter part of February, after six more applications, V. = $\frac{20}{50}$ was obtained March 7th; and after eleven more applications, V. $\frac{20}{40}$? on May 14th.

CASE X.—K. L., aged thirty, female, patient of Dr. Joye at Brooklyn Eye and Ear Infirmary, referred for treatment on May 17, 1889.

In February of preceding year, patient suffered from keratitis in O. S., which lasted for about six weeks, and left a corneal opacity covering the lower two-thirds of the cornea. V. = $\frac{4.1}{200}$, not improved by glasses, with atropia V. = $\frac{20}{200}$. The patient was a phthisical subject, well advanced in the malady, and the general nutrition was very defective.

Treatment began with $\frac{1}{4}$ m. a. for three minutes, which was increased up to $1\frac{1}{4}$ for three minutes. The case never made very encouraging progress. The vision did improve somewhat, being $\frac{10}{200}$ on June 2d, and $\frac{11}{200}$ on July 15th, and $\frac{20}{200}$ on October 9th, after a long interval of rest from treatment. The appearance of the eye was not noticeably improved, except at the lower nasal margin, where an area of clear cornea was visible.

I think the very poor general condition of the patient prevented a more prompt response to treatment. The eye was never very much irritated after treatment, but I was in constant dread of the cornea breaking down and making trouble. The patient's health finally became so poor that I advised her to abandon treatment.

Both the galvanic and faradic currents through the closed lids have, I believe, been employed in the treatment of corneal opacities, but have not thus far commanded the confidence of the profession. From a study of the foregoing cases, I am convinced that when applied directly to the opaque cornea, galvanism becomes a valuable and reasonably reliable method of treatment. I do not believe that I could have obtained equally good results from any other method, and in most of these cases the ordinary methods had been tried without benefit before I instituted treatment by electricity. As will be seen, the rapidity of visual improvement varies much in different cases, and in a large measure depends upon the position of the area of the greatest density of the opacity. The clearing is at first only observable at the periphery of the opacity, and when the scar is concentric with

the pupil no improvement in vision is manifest until late in the progress of the treatment. When, however, the pupil is obscured by the less dense margin of the opacity, most rapid improvement will be obtained from the first few applications.

The age of the opacity seems to have little to do with the rapidity of the improvement under treatment. As will be seen in the foregoing series of cases, which include both very recent and very old opacities, the improvement was as rapid in those which had existed for a long time as in the very recent ones. I would not begin treatment by galvanism till the limit of improvement which would naturally take place had been reached, but as soon as the eye is quiet and no further clearing seems to be taking place, the treatment should be instituted by very weak currents.

My experience with the treatment is not sufficient to warrant me in saying how much we may reasonably expect from it, and what cases we must decline as hopeless. In cases with dense opacities, treatment must be continued for a very long time to accomplish any noticeable results. But in cases I., III. and IV., all cases of long standing, with very dense opacities, there was a steady improvement while under treatment. How long this would have continued it is quite impossible to say. Our knowledge of the action of galvanism, when applied to the living human body, is not by any means as great as we could wish, and it is quite impossible to say at all definitely how it accomplishes the absorption of corneal opacities. It seems to me to be a matter of increased nutrition and of a retrograde metamorphosis of the scar tissue, accomplished by the electrolytic action of the currents. But since when we speak of the different actions of the current, that it is electrolytic in one case, cataphoric in another, etc., it is chiefly a matter of words, the observed phenomena are of much more importance.

After any destructive process in the cornea new material is hastily thrown up to repair the damage, and later on the scar tissue, which is opaque, is replaced by clear tissue. This process will continue till the new tissue becomes so firmly organized as to resist the effects of nature to remove it.

During this process of repair there is a high state of vascularity in the part, and in those cases where vessels are seen running on to the cloudy area, the prognosis is, I think, more favorable. Now, during the application of electricity, this picture is reproduced. The vessels are no doubt dilated by the action of the current. They are seen in great abundance running to the corneal margin or on to the scar. In some cases the scar is seen to be covered during treatment with a fine mesh of vessels, which extend only to the edge of the opacity and disappear with it, as under treatment the clear cornea encroaches upon the

scar. After the application the vessels almost immediately disappear, but I have no doubt that in a less degree the increased vascularity and stimulated nutrition continue for some time, and in treatment I endeavor to keep this process as active as possible without over-stepping the limit and producing a condition of stasis.

CASE I.—DURATION OF OPACITY 18 YEARS.

DATE.	Vision.	Current in m. a.	Duration of Application in minutes.
Dec. 13, '88....	$\frac{2}{200}$	$\frac{1}{2}$ *	1
Dec. 15, '88....	$\frac{4}{200}$	$\frac{1}{2}$ *	1
Dec. 18, '88....	$\frac{4}{200}$		
Jan. 23, '89....	$\frac{10}{200}$	$\frac{1}{4}$	1
Jan. 25, '89....	$\frac{9}{200}$	$\frac{1}{4}$	$1\frac{1}{2}$
Jan. 27, '89....	$\frac{18}{200}$	$\frac{1}{4}$	$1\frac{1}{2}$
Feb. 9, '89....	$\frac{20}{200}$	$\frac{1}{2}$	
Feb. 26, '89....	$\frac{20}{200}$	$\frac{1}{4}$	2
Mar. 2, '89....	$\frac{20}{200}$	$\frac{1}{2}$	2
Mar. 16, '89....	$\frac{20}{200}$	$\frac{1}{2}$	2

* Estimated.

CASE II.—DURATION OF OPACITY 2 MONTHS.

DATE.	Vision.	Current in m. a.	Duration of Application in minutes.
Dec. 18, '88....	$\frac{20}{200}$	$\frac{1}{2}$ *	1
Dec. 20, '88....	$\frac{20}{100}$	$\frac{1}{2}$ *	1
Dec. 22, '88....	$\frac{20}{50}$	$\frac{1}{2}$ *	1

* Estimated.

CASE IV.—DURATION OF OPACITY 18 YEARS.

DATE.	Vision.	Current in m. a.	Duration of Application in minutes.
Jan. 19, '89....	$\frac{20}{100}$	$\frac{1}{4}$	2
Jan. 21, '89....	$\frac{20}{100}$ †		
Jan. 22, '89....	$\frac{20}{50}$ †	$\frac{1}{4}$	2
Jan. 26, '89....	$\frac{20}{50}$ †		
Jan. 28, '89....	$\frac{20}{50}$ †		
Feb. 6, '89....	$\frac{20}{50}$	$\frac{1}{4}$	2
Feb. 9, '89....	$\frac{20}{50}$	$\frac{1}{4}$	1
Feb. 13, '89....	$\frac{20}{50}$	$\frac{1}{4}$	1
Feb. 16, '89....	$\frac{20}{50}$	$\frac{1}{4}$	1
Feb. 23, '89....	$\frac{20}{50}$	$\frac{1}{4}$	2
Mar. 1, '89....	$\frac{20}{50}$	$\frac{1}{4}$	3
Mar. 10, '89....	$\frac{20}{40}$	$\frac{1}{4}$	2
Apr. 1, '89....	$\frac{20}{50}$ †	$\frac{1}{4}$	2
Apr. 5, '89....	$\frac{20}{40}$		
Apr. 15, '89....	$\frac{20}{40}$		
June 8, '89....	$\frac{20}{40}$ *		

* With and without correcting glass.

CASE V.—DURATION OF OPACITY 6 WEEKS.

DATE.	Vision.	Current in m. a.	Duration of Application in minutes.
Jan. 25, '89....	$\frac{4\frac{1}{2}}{200}$	$\frac{1}{4}$	1
Jan. 28, '89....	$\frac{8}{200}$	$\frac{1}{4}$	2
Jan. 30, '89....	$\frac{8}{200}$	$\frac{1}{4}$	2
Feb. 4, '89....	$\frac{13}{200}$	$\frac{1}{4}$	3
Feb. 8, '89....	$\frac{17}{200}$	$\frac{1}{4}$	3
Feb. 12, '89....	$\frac{15}{200}$	$\frac{3}{4}$	3
Feb. 20, '89....	$\frac{17}{200}$	$\frac{1}{2}$	$3\frac{1}{2}$
Feb. 26, '89....	$\frac{17}{200}$	$\frac{1}{4}$	$3\frac{1}{2}$
Mar. 27, '89....	$\frac{17}{200}$	$\frac{1}{4}$	4
Apr. 1, '89....	$\frac{17}{200}$	$\frac{1}{2}$	4
Apr. 11, '89....	$\frac{20}{200}$	$\frac{1}{4}$	2
May 2, '89....	$\frac{20}{200}$	$\frac{1}{4}$	1
May 20, '89....		$\frac{1}{4}$	3
May 23, '89....		$\frac{1}{2}$	4
May 28, '89....	$\frac{20}{200}$	$\frac{1}{2}$	4
June 4, '89....		$\frac{1}{2}$	3
June 6, '89....	$\frac{20}{200}$	$\frac{1}{2}$	2
June 10, '89....		$\frac{3}{4}$	4
June 13, '89....		$\frac{1}{2}$	2
June 20, '89....		$\frac{1}{2}$	4
June 27, '89....		$\frac{1}{2}$	3
July 5, '89....	$\frac{23}{200}$	$\frac{1}{2}$	3

CASE VII.—DURATION OF OPACITY 7 MONTHS.

DATE.	Vision.	Current in m. a.	Duration of Application in minutes.
Feb. 3, '89....	$\frac{20}{200}$	$\frac{1}{2}$	1
Feb. 5, '89....		$\frac{1}{2}$	2
Feb. 11, '89....	$\frac{20}{200}$ †	$\frac{1}{2}$	2
Feb. 13, '89....	$\frac{20}{100}$ †	$\frac{1}{2}$	3
Feb. 19, '89....	$\frac{20}{50}$ †	$\frac{3}{4}$	3
Feb. 20, '89....	$\frac{20}{50}$ †	$\frac{3}{4}$	3
Feb. 25, '89....	$\frac{20}{50}$	$\frac{3}{4}$	4

CASE IX.—DURATION OF OPACITY 2 MONTHS.

DATE.	Vision.	Current in m. a.	Duration of Application in minutes.
May 14, '89....	$\frac{6}{200}$	1	1
May 16, '89....	$\frac{1}{200}$	1	2
May 18, '89....	$\frac{10}{200}$	$1\frac{1}{4}$	3
May 22, '89....	$\frac{9}{200}$	$1\frac{1}{2}$	3
May 24, '89....	$\frac{13}{200}$	$\frac{3}{4}$	3

CASE IX.—DURATION OF OPACITY 2 MONTHS—
Continued.

DATE.	Vision.	Current in a. m.	Duration of Application in minutes.
May 28, '89 ...	14/200	1	3
May 30, '89 ...	14/200	1 1/2	3
June 4, '89 ...		1	3
June 8, '89 ...	16/200	1 1/2	2
June 13, '89 ...	16/200	1	3
June 15, '89 ...	18/200	1 1/4	1
June 18, '89 ...	18/200	2	2
June 21, '89 ...	20/200	2	2
June 5, '89 ...	20/200	1	2
June 28, '89 ...	20/200	1	3
July 5, '89 ...	20/200	1	2
Aug. 5, '89 ...	20/100?	1 1/2	3
Aug. 15, '89 ...	20/100		
Aug. 27, '89 ...	20/70	1	3
Feb. 17, '90 ...		1	3
Feb. 21, '90 ...		1	2

CASE IX.—DURATION OF OPACITY 2 MONTHS—
Continued.

DATE.	Vision.	Current in a. m.	Duration of Application in minutes.
Feb. 26, '90 ...		3/1	3
Mar. 5, '90 ...		1	3
Mar. 7, '90 ...	20/50?	1	3
Mar. 10, '90 ...		1	3
Mar. 21, '90 ...	20/50?	1	3
Mar. 26, '90 ...		1	3
Mar. 31, '90 ...	20/50?	1	3
April 4, '90 ...		1	3
April 8, '90 ...		1	2
April 14, '90 ...		1 1/4	3
April 28, '90 ...		1	3
April 30, '90 ...		1	3
May 5, '90 ...	20/70	1	3
May 11, '90 ...		1	3
May 14, '90 ...	20/10?	1	3

A CASE OF ULCERATIVE APPENDICITIS, ILLUSTRATING THE VALUE OF EARLY OPERATIVE INTERFERENCE.

BY GEO. RYERSON FOWLER, M.D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

Read before the Brooklyn Surgical Society, April 17, 1890.

On March 15th, I was asked by Dr. Cruikshank, of this city, to visit with him, in consultation, Miss M., æt. twenty-two, artist by profession, who gave the following history: Two days previously, having been in her usual health, she was seized with colicky pains, referable to the right hypochondriac region. Dr. Cruikshank was called, and his suspicions were at once excited of the existence of some inflammatory trouble in the neighborhood of the appendix vermiformis. The patient, however, after the administration of an anodyne seemed to become perfectly comfortable. The next day, after the influence of the latter had passed off, the symptoms returned, and the medical attendant had no difficulty in determining an isolated point of tenderness corresponding to the location of the appendix. There was some diffused tenderness as well, and in addition to this a plainly perceptible tympanites. The suspicion thus strengthened of appendicitis was quite sufficient to lead the gentleman in attendance to ask for further

counsel. Consent to this was rather reluctantly obtained, so slightly ill did the patient feel, and Dr. B. F. Westbrook and myself were asked to visit her in consultation. We found the patient a somewhat neurotic lady, of spare habit, who greeted us with a smile and seemed inclined to look lightly upon her illness. Under the influence of a quarter of a grain of sulphate of morphia and a sixtieth of a grain of sulphate of atropia her pains had been quieted, and she appeared to be perfectly comfortable. The temperature had fallen from 101° to about 99° ; the skin was cool and moist, and she presented the appearance of a general "well being." Palpation and percussion failed to reveal the slightest evidences of induration in the neighborhood of the ileo-cæcal valve. Retraction of the thigh was notably absent, as well in fact as all of the usually recognized signs laid down as characteristic of the so-called perityphlitis, or ileo-cæcitis, with the sole exception of tenderness. Upon drawing a line from the centre of the umbilicus to the tip of the anterior superior spine of the ileum the tenderness was found to be best marked at the point where this line intersected the outer edge of the right rectus muscle. The diagnosis of appendicitis was confirmed at this time, and the question of immediate operative interference discussed. It was finally agreed, inasmuch as it was late at night, that the bowels should be first gently moved by means of small doses of calomel, and further interference postponed until the following morning.

We met at the patient's house the following day. Her condition had not improved, but, on the contrary, she appeared to be somewhat the worse for both the purge and the delay. All agreeing, with the assistance of Drs. Delatour, Cruikshank, B. F. Westbrook, I proceeded to perform laparotomy. An incision about five inches long was made upon the outer edge of the right rectus muscle, its centre corresponding to the point of tenderness previously made out by Dr. Cruikshank. Upon incising the peritonæum, a loop of distended and somewhat congested intestine presented itself at the opening; this was pushed gently to one side, when several such, with traces of lymph upon their surfaces, were found directly underneath. In separating these, in order to locate the site of the appendix, a slight flow of pus occurred, which was quickly sponged away. The appendix was now discovered, lying in a direction pointing downward and backward from its attachment to the cæcum, and partially covered by the latter. It was attached by a rather thick and firm adhesion to a neighboring loop of the ileum for its entire length. After sponging away the pus which had exuded from the swollen and gangrenous appendix, the latter was found to be perforated in several places, presenting a somewhat worm-eaten appearance. After isolating the parts by means of

gauze packing and the fingers of my assistant, I proceeded to pass an aneurism needle, armed with a double silk ligature, through the adhesion upon the side of the appendix, and attaching the latter to the loop of the ileum above mentioned in such a manner as to encircle its base. One-half of this was tied cautiously, for the structure of the appendix was so thoroughly broken down as to make a somewhat insecure hold for the ligature, as near as possible to the intestine, while the other half was placed sufficiently far from the first to insure against further escape of the contents of the appendix into the peritoneal cavity when section of the former should be made. The appendix was now cut away and removed. So thoroughly had the surrounding parts been isolated by the gauze packing and the assistant's fingers that no further infiltration of detritus had occurred. The parts were thoroughly sponged with a 1-8000 solution of mercuric iodide, a glass drain placed with its extremity resting against the stump of the remains of the appendix, and a packing of zinc gauze placed around the former, as well as a strip of the same material passed through the glass drainage-tube, to act as a capillary drain. The upper half of the wound was brought together by sutures, the lower half having simply temporary sutures placed in position to prevent eventration of the distended intestinal coils. This portion of the wound was likewise packed with zinc gauze, layers of the latter were placed upon the outside, and a firm binder applied over all.

The patient left the table with a pulse of 120, and rallied well from the operation. The next day the temperature was 100° and the pulse 112. The temporary sutures were loosened and the gauze packing removed and replaced by fresh. There was some purulent material in the meshes of the gauze removed, with a very decided fæcal odor. The tube was likewise removed, cleansed, and replaced. This course was pursued upon the two next succeeding days, when some rise of temperature occurring, gentle irrigation was ventured upon in addition. Upon the fourth day a sudden rise of temperature and the occurrence of swelling in front of the right ear and behind the angle of the jaw announced the onset of a parotitis.

Under twice daily irrigation and packing of the wound, the latter assumed and maintained a perfectly aseptic condition, the fæcal odor diminishing rapidly and, together with the slight discharge of pus, disappearing altogether with the coming away of the silk ligature from about the stump of the appendix, upon the ninth day after the operation. The temperature, however, from the time of the occurrence of the parotitis until the day after the operation, continued to range from 99° to 101°, although there was absolutely nothing about the condition of the wound or its surroundings to account for this. That the

rise of temperature was a mild manifestation of a septic fever there can be no doubt; but the exact source of this sepsis, in view of the exceedingly satisfactory condition of the wound, or the channel by means of which it gained entrance into the general system, is to me unknown.

I have refrained from discussing points of a non-surgical character in this case, though there are many such of great interest, as I understand Dr. Cruikshank intends making another report of the case from a purely medical standpoint. The case, from a purely surgical point of view, is complicated, and is reported as an instance in which an exceedingly bright and useful member of society was snatched from the very jaws of death by a timely operation.

ADDRESS TO THE GRADUATES OF THE TRAINING
SCHOOL FOR NURSES, ST. LUKE'S HOSPITAL,
BETHLEHEM, PA., OCTOBER 18, 1890.

BY FRANK E. WEST, M.D.

An English writer has recently said: "American nurses seem to have a wide and honorable career before them." This statement has a much greater significance than would appear from a casual glance. It will bear careful study.

Many of us recall the condition of affairs previous to the inauguration of the present system of nursing. In our hospitals the immediate care of the sick was relegated to individuals, many of whom had chosen nursing as a comparatively easy way of obtaining a livelihood. They were simply paid servants, and in far too many instances they rendered as little as possible in return for their monthly wages. The faithful ones gave food and administered remedies at stated hours. They made the bed and maintained order. This done, and their duty was performed.

One who entered such an institution as a patient felt that he had reached a place where it was his business to be sick, to take what came, and ask no questions. He was entitled to get such attention as the gravity of his illness rendered necessary. Further than this he could not expect, and rarely got. Sympathy, comfort, encouragement were not for him. How could they be? His attendant did not know how to give them, even if so disposed.

As convalescence took place there was less necessity for a nurse's attention, therefore the patient got less. Such medicine as was needed was given. Food was supplied according to the prescribed bill of fare, with little attention to detail or attractiveness.

In domestic practice matters were but little better. The circumstances were different, and the cause of complaint unlike that characteristic of our public institutions. Yet, in many instances, matters were far from satisfactory. The patient ill at his own home was surrounded by loving friends, solicitous to do everything to insure a speedy recovery. He received all that kindness and solicitude could furnish.

Judgment in care of the sick, however, was often lacking. Over-solicitude frequently rendered the relative, or friend, unfit to be an attendant in the sick-chamber. Sometimes the physician would learn that the medicine had not been given since his last visit, or possibly at irregular intervals. Occasionally the administration of the food had been omitted. The excuse furnished would be: "The patient did not wish to be disturbed, so we did not urge it." Now and then another thing happened. The doctor is hurriedly called, and, on arrival, learns that Mary, seeing that it was time for the medicine, had given it, only to discover that Sarah had already anticipated her by a few moments.

How often did the restless night, an increase of fever, and the fretted pulse, tell of too much excitement in the sick-room! Possibly a kindly neighbor volunteered to "watch" for the night, and had entertained the invalid with an account of some one who had been sick in precisely the same way. This person died!

Every community had its "natural nurse." This individual always knew more than the doctor, certainly more than the doctor who happened to be in charge of this particular case. It has been alleged that some were even bold enough to argue with the preacher. The natural nurse is fast becoming an extinct species. May the fossil age continue to possess it!

The system of special training of those who care for the sick has brought about a great change. Our hospitals have been transformed; for it is in these institutions that nurses are taught. The mere presence of several earnest women, anxious to be of use in the world, has created a different atmosphere. There is more of the household than in former years. One feels that there is kindly interest abroad in the place.

While, of necessity, there is much of business detail and routine, it is so obscured by gentle sympathy and friendliness as to be lost to sight. Under the guidance of a competent leader, a body of intelligent, zealous women, who have an object in life, care for the sick. The consequence

is that the patient is insured the best possible attention on the part of his nurse.

Through the faithful, painstaking attention of the bedside attendant the efficiency of medicinal treatment has been greatly increased, and the rate of mortality has diminished. There is more comfort in being sick than formerly.

With convalescence care does not abate. The successful issue of the illness is of especial interest to the enthusiastic nurse. Now, anxious to fully establish a return to health, she carefully prepares appropriate food, and presents it to her patient in a tempting form. This is frequently a very important matter. In many diseases proper food, in suitable quantities and regularity as to time, is the most important feature in treatment.

The fully equipped nurse should be an expert cook. Cooking has been practised since the advent of man, yet how ignorantly it is performed even at the present day. It is one thing to prepare food; it is quite another to get the most nutrition from a given article of diet. In many instances more nutriment is thrown away, or wasted in cooking, than is retained as food. The chemistry of cooking is still in its infancy. Its study opens up a wide field for scientific investigation and discovery. This subject is of great importance to us as individuals, who eat to live. It is also of decided interest to communities and the State, in the general direction of public economics. An important question; but we cannot discuss it at this time.

In private practice the advent of the skilled nurse has accomplished great good. In case of serious sickness she has become a necessity. Without her help the attending physician feels very much handicapped. The presence in the sick-chamber of an intelligent, earnest nurse inspires the patient with confidence. There is a feeling of restfulness and quiet about the room which is healthful, and which abounds for good to the invalid. The surroundings conspire to the well being of the one sick. This is a decided advantage. When the doctor calls he receives an intelligent account of all that has occurred since his last visit. This enables him to act more understandingly. In consequence, he can frequently be of better service to his patient.

Furthermore, it often happens that emergencies arise suddenly. Many of these the competent nurse is perfectly capable of meeting. She, at least, knows how to act until the arrival of the physician. Her presence may mean all the difference between life and death to the one intrusted to her care.

The system of training nurses is already an established success. Much has been accomplished, but there is still much more to do.

The question of preliminary education is already being agitated. The competent trained nurse needs more than ordinary intelligence. She needs an especial fitness for the work she is to undertake. It is probably not far off when rigid entrance examinations will be required for admittance to our training schools. While the present work is good, we must ever strive to do better.

You, who to-day go out from this institution with its diploma, have had the best of opportunity. You have learned a great deal, and are fitted to follow your chosen profession. It is probably unnecessary to caution you not to be satisfied with your present attainments. You have now the foundation on which to build. Do not rest with this. Always be alert to learn how to do better work. Your experience has already taught you what is essential to the successful nurse.

Kindness, patience, composure—in short, all the virtues which go to make up the perfect woman—are frequently called into requisition in your work. There is one quality we would like to call to your attention. Be close observers in the sick-room. Study how to observe intelligently.

In ancient times the practice of medicine was in the hands of the priests. Medicine was made subordinate to religion, and surrounded by great mysticism.

All the knowledge the priests possessed was derived from tradition. These priests were not physicians. The sick person, after certain religious rites, was made to sleep, and the appropriate remedy was indicated in a dream. If the patient recovered, the record of cure was placed upon the walls of the temples.

The history of medicine, however, dates from the time of Hippocrates. He has rightly been called the "father of medicine." It was Hippocrates who first recognized that disease has a "natural history." He instituted habits of careful observation and interpretation of symptoms, and it is here we observe the first beginnings of clinical medicine. From this up to the second century but little could be claimed for medicine as a science.

Now the name of Galen comes into prominence. He found the profession of his time divided into sects. Being an enthusiastic student of anatomy and physiology and a man of profound knowledge (for his time), he set himself to reform these evils and bring the profession back to the principles of medicine as taught by Hippocrates.

In attempting to explain the phenomena of disease in accordance with his knowledge of anatomy and physiology, he was led to theoretical conclusions. His theories and dogmas exerted a powerful influence until the sixteenth century, when a return to the study of clinical

medicine laid the foundation for modern medical science. At about this time (1628) Harvey discovered the circulation of the blood. A new era in the system of medicine began. Sydenham and John Locke were exerting a great influence upon English medical thought. The profession was tired of theoretical disputes. Sydenham took Hippocrates as his model, and set himself to study the "natural history of disease." He has been aptly styled the "English Hippocrates."

His friend, John Locke, about this time wrote as follows: "You cannot imagine how far a little observation carefully made by a man not tied up to the four humors which have of late prevailed, will carry a man in the curing of diseases, though very stubborn and dangerous; and that with very little and common things, and almost no medicine at all." This, you see, is a recognition of the "*vis medicatrix naturæ*," a power which Hippocrates had noted many centuries before, and which we still recognize to-day.

The drift of modern study is in the direction of morbid anatomy. With the advances in chemistry and the perfection of the microscope much knowledge is being obtained. This is as it should be; but while we study the footprints of disease, let us not forget to maintain a careful observation of the processes by which these results come about. Remember, the history of medicine shows that advances have been made whenever the natural history of disease has played a prominent part in our study.

Therefore, we urge you, study to observe intelligently. The intelligent, observant nurse can do much to assist the medical profession in the study of clinical, that is bedside, medicine. The mind, trained to observe, can aid us in adding to our knowledge of the natural history of disease.

Disease is constantly changing and new phases are continually presenting themselves. Man is by no means a constant quantity. He may have inherited defects or morbid tendencies; he has developed under varying circumstances of climate, habits, etc., which may have changed his physical constitution, and perhaps developed within him peculiar susceptibilities; he may be the subject of disease of different stages and various combinations, and each influenced by some inherited tendency.

Truly, American nurses have a wide and honorable career before them.

AMERICAN PUBLIC HEALTH ASSOCIATION.—This Association will hold its Eighteenth Annual Meeting in Charleston, S. C., December 16, 17, 18, 19. The topics for discussion have already been published in the JOURNAL, p. 617.

REPORT OF CASE OF ABSCESS OF THIGH WITH ARTHRITIS OF KNEE.

BY H. L. COCHRAN, M.D.

Read before the Brooklyn Surgical Society, October 2, 1890.

Mrs. S., aged 20 years and 4 months, born in Ireland, always well before birth of her child, March 27, 1890. Father died from hæmorrhage (probably from the lungs); mother still living and perfectly healthy. No brothers or sisters.

March 27, 1890, was confined, had no trouble; in fact, the baby was born before arrival of the attending physician. Child strong and healthy. Lochia stopped on third day. Patient had a chill, followed by some fever, which lasted several days. Eight days after confinement attending physician ordered her to get up. One week later was taken with severe pains in the right thigh, extending from the hip joint to the knee. This was reported to her physician, who told her it would be all right, gave her no advice or special treatment, and did not come to see her again. The pain increased, and she was obliged to go to bed. Patient says there was a ridge or cord, red and swollen, extending along the outer side of the thigh, which was very painful. As there was no improvement, on April 18th another physician was called, who diagnosed sciatica and treated her for that disease until May 16th without any relief, the pain and swelling growing worse.

May 23d I saw the case at request of Dr. McCorkle, who had been called, but did not wish to take charge of the patient.

I found patient emaciated and very weak, unable to retain nourishment of any kind, pulse weak and rapid, temperature 100° , and a generally hectic appearance. She was lying upon her back, the right leg extended, thigh swollen to about twice the normal size from the hip to below the knee; tissues were tense, red and hot, and at the middle and anterior portion of the thigh, a point where there was fluctuation, patient was unable to move the leg, and the slightest motion of the knee joint gave rise to intense pain. Below the knee the muscles were more or less atrophied. I told patient that she had an abscess, and I desired to open it at once, but she refused. I advised her to enter a hospital, as her surroundings were not such as proper treatment required, but this she refused to do, and said she would not leave her home. I ordered her to apply flaxseed poultices, gave her two grains of quiniæ sulph. every three hours, and next day, with assistance of Dr. H. C. Rogers, introduced an exploring needle, found

pus, and made a free incision in the anterior part of the thigh at the point of fluctuation. Incision was followed by a copious discharge of pus, which was wiped up with cloths, so that I am not able to state the exact quantity, but think there must have been not less than a quart. I inserted a large rubber drainage tube, applied a dressing of iodoform and antiseptic gauze. On the next day I found everything soaked with pus, and after removing the saturated dressings, the patient squeezed out several ounces more of purulent material. I then washed out the cavity with solution of bichloride of mercury (1-5000), and reapplied the dressings of iodoform and gauze. Patient's temperature normal, nausea gone, and has good appetite. This method of treatment was continued for ten days, during which time patient's general condition improved very much. At the end of ten days the pus stopped flowing, and by the twelfth day the tube was removed. On the fourteenth day after operation the cavity was apparently closed and the thigh well.

June 12th.—Knee still swollen, white, glistening, very painful, and has the general appearance of tubercular disease, no fluctuation. Applied an ointment of potas. iodidi, \mathfrak{z} i; lanolin, \mathfrak{z} i; morphia sulph, grs. ij.

June 13th.—Patient seen by Dr. Wight in consultation, who considered it a case of puerperal arthritis; advised rest of joint upon a splint, continuation of ointment, with potas. iodidi in combination with bitter tonic internally.

June 14th.—Applied leather splint, but after two days patient removed it, as she said it was causing her pain.

June 17th.—Mrs. S. complained of pain on the outer side of the thigh about the middle. On examination, found the thigh swollen, and on the outer side hard and doughy, while the swelling about the knee appeared to be diminished. Applied poultice of flaxseed.

June 20th.—Thigh more swollen and softer to the touch, but no fluctuation. Knee very tender, with shooting-pains through the joint. Gave morph. sulph., gr. one-eighth, one dose, and ordered powders of phenacetine, grains five, every four hours until easy.

June 22d.—Pain in knee almost gone. Painted knee with tincture iodine, but found the tissues so tender that I was obliged to discontinue it. Found pus oozing from the cicatrix of the old incision in the thigh. Enlarged the opening and introduced drainage tube, and reapplied the poultice.

June 24th.—Pus flowing freely from the tube. Cavity washed out with carbolic solution (five per cent.). In the evening was called to see the patient again, and found her suffering from shooting-pains about the knee joint, so severe that she would scream during the

attacks of pain. I again returned to the phenacetine, grs. five, every four hours, and applied poultice to the knee.

June 25th.—Patient more comfortable than at any time for two or three weeks. Told me two powders of phenacetine had relieved the pain. Pus discharging freely from the thigh. Size of knee much diminished. Had been able to move from one side of the bed to the other with but slight assistance, a thing almost impossible before on account of severe pain. Until June 28th the patient was very comfortable, pus discharging freely from the thigh, which, I omitted to say, was washed out daily, when the knee again became tender, inflamed, and swollen, and thinking that I detected fluctuation at the lower and outer border of the patella, made an incision with curved bistoury, but found no pus. Poultice of flaxseed again applied.

On July 1st I left town for the summer, leaving the case in the care of Dr. H. C. Rogers, who attended the patient for about a week, when, as she was not improving and the surroundings were not such as could be wished for, finally obtained her consent, and she was removed to the Long Island College Hospital, service of Dr. E. A. Lewis and later of Dr. J. H. H. Burge.

For the remainder of this history I am obliged to depend upon the records of the house surgeon, Dr. Townsend.

July 8th Mrs. S. was received at the hospital and immediately put to bed. Incision in the thigh was enlarged for more thorough drainage, and poultices applied until July 18th, when the cavity closed up. Lead and opium wash was applied to the knee, which gave some relief, and was continued until August 13th, when blister of cantharides, $1 \times 3\frac{1}{2}$ inches, was placed on both sides of the upper border of the patella.

August 15th, another blister, $1\frac{1}{2} \times 3$ inches, was placed below the patella. Quiniae sulph., grains three, was given three times daily. This treatment gave more relief than anything that had been used; the patient, however, has much pain, and total inability to move the knee joint.

September 12th patient left the hospital at her own request, improved. Was able to move about with aid of crutches. Pain only when attempting to walk with right leg. Knee swollen and almost completely ankylosed.

September 22d I called at patient's home, and found her getting about with aid of crutches. The knee was somewhat larger than the other; the tissues about the knee were tense, red, and had a smooth, shining, or glassy appearance, doughy to the touch; no pain, excepting when attempting to move the joint. Ankylosis apparently com-

plete in the extended position. The general condition of the patient, otherwise, very good.

In concluding the report of this case, which has, to me, been a most interesting one, there are several questions which I should like to bring up for discussion.

- 1st. Was this a case of simple puerperal arthritis?
- 2d. Was the disease at the knee due to extension of the abscess of the thigh, the contrary, I believe, being the rule?
- 3d. Has the case a tubercular element?
- 4th. What should be the future treatment? Is it a case for resection or other operative measures?

DISCUSSION.

Dr. RAND.—It is difficult to give an intelligent answer to these questions without seeing the case, in spite of the excellent history we have had.

In answer to the first question, the fact that suppuration in the joint did not occur after such well-marked inflammation would be some, though far from conclusive, evidence that it was not, strictly speaking, a puerperal arthritis.

In regard to the second question, I see no reason why, in a prolonged suppurative inflammation of the thigh, the knee might not become involved as well as any other contiguous tissue.

My opinion as to its being tubercular or not would be founded somewhat upon the family history of the patient, but whether it is a simple or tubercular arthritis, as the patient is improving in general health as well as locally, the best treatment for the present would seem to me to be constitutional, combined with absolute rest of the joint.

Dr. LEWIS.—The patient had already been ill some weeks when I first saw her in the hospital, the second week in July. From what I saw of her at that time and later I would answer the questions as follows: I would put the second question first, *i.e.*, did the suppuration take place in the thigh before there was knee-joint trouble? This is a question of fact which I understand is answered in the affirmative. The absolute cause of this abscess does not appear. The inflammation in the thigh having appeared first, the knee-joint trouble is not hard to account for. First, by extension of inflammation, and, second, by the well-known tendency of joints at complete rest to become stiff. Thus the first question is answered. It would seem not to be a puerperal arthritis, but an extension of inflammatory processes into the joint. From the previous history of the patient and the course of the disease, I should hardly think the trouble was tubercular. As Dr. Rand

has said, the future treatment should depend on her general physical condition as well as the local trouble. I should favor non-interference, unless she becomes so crippled that it is absolutely necessary.

Dr. BURGE.—I have not any extended remarks to make. I took the patient after Dr. Lewis' care of it, and she was in the hospital during all of my service, with a gradual improvement of her general condition and some improvement of the knee itself. I would like to ask Dr. Cochran if he originally opened that abscess about the knee?

Dr. COCHRAN.—No. I opened the abscess in the thigh, and just before I went away, I thought I detected a little point of fluctuation below the patella, but I found no pus there.

Dr. BURGE.—I can only say that I never regarded the case as a tuberculous case, but rather a local, inflammatory action, complicated by the abscess above, and whether that inflammation extended down to the knee and involved it or not, I never knew.

I am rather inclined to agree with the view already expressed as to the best treatment of the knee. Under the present circumstances I should hardly favor exsection, and I suspect that after giving plenty of time and fixation and rest and general supporting treatment, that she will improve sufficiently to make it a better limb than she would have by any radical method.

Dr. WIGHT.—I have no exact dates of the confinement, but I reason in this way: In regard to the etiology of the case which has been presented, there was, as we know, sufficient occasion not only for an abscess, but for an inflammation of the veins, as there is in every case of this kind. We know there are waste materials that are absorbed into the blood, and are entirely competent to produce inflammation of the veins, to produce deposits here and there in the capillary system, and to produce inflammation of the joints. We know that from a large experience and from an extensive observation.

Now here was a case of a woman, to be sure not in good circumstances, not well nourished perhaps, suffering privations, a laboring woman who had a baby which was born a short time before, not very long before she had all these symptoms which led up to this inflammation of the limb, and that that eventuated in suppuration. Now, while it is true, so far we can judge that the condition of the joint was consecutive, if not a consequence of, was consecutive to the main manifestation of the other trouble.

I very well remember, whether I made the memorandum at the time that I saw it or not, that the whole condition of the abscess, the trouble with the joint, was quite certain or reasonably certain to be the result of the puerperal condition. I well remember the fact also, I am positive of that, that the inflammatory process not only extended to

the soft parts, but that it extended to and affected the internal condyle and caused disturbance and perhaps more or less formation of white cells in that structure, and that whereas it did seem to be a consecutive thing, I believe after all it was due largely to the same original cause of the infection and irritation; it might not have taken place quite so soon. I am inclined to believe that the same material which produced the infecting abscess caused them. I am inclined the more to that view, while I would not combat strongly the other, though I do not think it expresses all the fact; while I would admit, I would not admit it fully. But I must claim the original cause as being largely concerned in the production of the condition of the joint which I saw.

I do not think it is tubercular. I can well understand how a tubercular infection might be grafted onto this condition; but in my judgment all these results were largely dependent on the puerperal state.

If she had been carefully looked after it is possible that the absorption might have gone on without producing the changes noted in this case, and so I would incline to exclude tubercular infection, unless it was intercurrent. I am told there was a tubercular taint in the family. I can well understand how tubercular infection can take place in any such low conditioned tissue; that I don't deny.

Now as to treatment in this case I have nothing especial to say. I think I would let the case alone, and build it up and get it in the best shape I could therapeutically and hygienically and every other way. I do not feel that I can give a conclusive and reliable opinion, not having the patient before me, but that is so far provisionally expressed as an opinion. If the limb becomes stiff and the joint cannot be moved, of course I would advise an operation when the time comes. But if the knee can be only slightly bent, I certainly wouldn't interfere with it if there was no indication of necrosis or any change of that kind.

Dr. PILCHER.—It is difficult to add anything of value to what has already been said by these gentlemen who have had the observation of the case, certainly by one who has simply heard the report of it. I inferred, however, from the description of the case that the knee joint was never opened in the course of the treatment, but that after it had been greatly swollen and had presented all the appearance of being in a suppurating condition, and the original abscess in the thigh had become nearly obliterated, that it improved rapidly when an outlet of pus again took place through the original tract. That would lead one to suppose at least that there had been suppuration within the joint. Probably, as has been remarked by Prof. Wight, this was consecutive to the original thigh abscess, whether consequent upon it or not is another thing, but consecutive to it, and that it had finally gained relief by

rupture into the region occupied by the original thigh abscess. Then in course of time drainage in that direction became interfered with, and then there was a recurrence of more acute and active symptoms in the joint. With that history of the case I frankly differ with my colleagues as to what ought to be done; I don't think it ought to be let alone. The probabilities are that there are still suppurating foci within that joint cavity. I submit as a suggestion that as the trouble still continues, as there is very little question there has been suppuration within that joint, as that joint cavity has never been opened, that it would be a proper thing at least, in order to bring about a complete cure, to make free incisions and to explore it, not necessarily with a view to resection, for the probabilities are that there is not that amount of bone disease that would demand resection, although there is imprisoned pus still present that ought to be let out. There may be necrotic masses there that may properly be liberated and removed, all of which would be ascertained at least by adequate explorative incisions. This opinion, however, is based on the history of the case, as I have understood it from the reporter. Personal examination might dictate another conclusion. It is very easy for us to evolve a theoretical case and then say what should be done.

Dr. BURGE.—I regret even more than ever now that I didn't hear Dr. Cochran's paper, for I don't remember any time in the history of the case when that joint was so filled with pus as to make it at all a thing to be suspected that the joint was infected. Its greatest relief during my period of service was obtained after the application of three or four blisters on the sides of the joint, and I never had any certain evidence that the case was of puerperal origin, and yet it may have been. It was in the condition in which one might very well suspect that that was so, but that never was clear. It never was a case of serious acute active inflammation, with great swelling, while under my observation. I don't know what it may have been in Dr. Lewis' day or what others may have seen there.

Dr. WACKERHAGEN—I would like to ask the age of the person.

Dr. COCHRAN.—Her age was twenty years and four months. I regret not having the patient here this evening, but I was unable to get her out. The inflammation seemed to me to start in the thigh, from the history which she gave me, and I noticed after it was opened that the swelling at the knee began to subside, and so it was two or three times, the knee would swell up and the swelling in the thigh would go down, then the swelling in the knee would go down and the thigh would swell up; and it seemed as though there was communication between the tissues, that the pus had worked its way down about the knee joint. I didn't suppose at any time that I saw the patient that

there was pus actually in the joint, but I supposed the tissues around the joint were more or less infiltrated with pus. The knee was never enormously swollen, but it was swollen so that it was considerably larger than the well knee. At the present time the tissues are very red, and there is considerable swelling, and it looks to me as though there was inflammation going on about the joint; whether in the joint or not I don't know. The patient is in such a condition that without an anæsthetic it would be impossible to make an examination to find out how much ankylosis there is, but at present it is impossible to move the knee without great pain, and when I examined her I didn't care to give her that pain; but apparently the knee was perfectly stiff.

Dr. RAND.—I would like to ask if at any time within the history of the case there was evidence of fluid within the joint cavity.

Dr. COCHRAN.—I can't say that there was. At the time that I made the incision I thought that there was a little pocket; I didn't make a deep incision. I got no pus at that time. I was mistaken.

Dr. RAND.—Prior to that second enormous discharge of pus from the thigh, was there fluctuation about the joint?

Dr. COCHRAN.—The patella was not floated.

Dr. BURGE.—If I had ever seen the case in the condition that Dr. Pilcher has pictured it in his imagination, I should certainly have advocated opening the joint; but I never did.

Dr. RAND.—It would seem that if there had been such an accumulation of pus in the joint as the President supposes, there would have been unmistakable evidences of its presence in the capsule before the opening was made in the thigh, and there would then have been a sudden, or at least a marked, decrease in the size of the joint; which symptoms I did not understand to have existed.

Dr. WIGHT.—Your suggestion leads me to make a note, as it were, of the special question connected with such cases which has not been brought forward, but which you did broach, but on which point I should certainly agree with you—that is, that in all these cases of local infection, proper and desirable incisions should be made for the purpose of drainage, and allowing the infecting material to run out, and getting in disinfectants and antiseptics. This point I have been working on a great many years, and the more I work in that direction the more value I see in just this kind of work. And if I were to make any criticism on this case, it would be to the effect that I did not advise a little more of that work done than I did; but the patient seemed to be in such a pitiable condition and so exhausted that perhaps I allowed my sympathies to work. I am greatly in favor of proper incisions and free drainage in all these cases of infection, and, if it be necessary, of opening joints or cavities; but the opening is a subordinate question to the drainage question.

SURGICAL CLINIC AT THE HARLEM HOSPITAL,
MARCH 31, 1890.

BY THOMAS H. MANLEY, M.D., NEW YORK.

Specially reported for the **BROOKLYN MEDICAL JOURNAL.**

The speaker said that the time at their disposal on this occasion would be occupied with the exhibition of a few cases of spinal disease in childhood; its etiology, pathology, and treatment; and with a view of blending the practical with the theoretical, he would present four cases in the various stages of the disease. Their ages ranged from two years to ten, two girls and two boys. With reference to their previous histories, he wished to call special attention to a few points. These children were all born of healthy parents, who were still alive and in good health. They never had been injured by falls or blows, had always been fairly well nourished, and in every instance their general health was good at the present time. In all four cases the disease was located in the bodies of the dorsal vertebræ, and the first indication of pathological lesion was the appearance of the deformity. In three of the cases the displacement was angular, and in one lateral. Dr. Manley said that the local diseased condition in those cases presented many features of much interest from a pathological standpoint. First, with regard to the specific microbic nature of the disease, formerly designated scrofulous, but now tuberculous, how indeed any specific contagion should manifest itself primarily in the osseous structure of the spine by selection, was a mystery. It undoubtedly, first, was confined to the lymphatics, then extending through the trabeculæ to the cancellous tissue, exciting inflammation of a low type, which gradually induced mal-nutrition and disintegration of the spongy bodies, this process of destruction being so gradual and insidious that no pronounced constitutional disturbances were manifest, and allowed the work of reparation to go on apace with the giving way of the osseous parts; and hence by the time the disease had ceased, the work of compensatory adhesions and hypertrophy was complete. It is most singular to note the segment of the spine in which this tuberculous caries commences and generally confines itself, inasmuch as it tells against the traumatic origin of the lesion and demonstrates how wisely nature selects situations to do her work where the least sacrifice must be made. The dorsal vertebræ are firmly braced on the sides by the ribs, which latter serve as splints, and prevent much lateral displacement. The thoracic walls are very flexible in the young, and adapt themselves

to altered positions without any impairment of function to the included viscerae. A similar pathological process in the cervical bodies which form the posterior wall of the pharynx would be almost invariably fatal. With those cases there have been no abscesses to open, though there can be no doubt that pus forms here, as elsewhere, in tuberculous ulcerations, but was disposed of by inspissation and absorption.

With regard to treatment, the speaker said, we must be guided by indications. In a general way, however, there were a few principles which, if rigidly adhered to, would lead to the arrest of the disease, to what is called a cure. They are, first, good hygienic surroundings, wholesome diet, rest, and time. The most rational and natural expedient, rest; relief to the strain and pressure, at the seat of the disease, is that secured in the recumbent position; lying on the back or side, or in the semi-prone position. Every sort of so-called braces and supports, in many cases, are worse than useless. If worn for any considerable period of time, by their pressure, they interfere with the circulation and lead to a weakening, wasting, and atrophy of the powerful muscles of the back; in females who will always wear the corset, they may not work so much injury; but with the boy who needs a strong muscular development to support and steady the trunk on the sacrum, too much use of such an apparatus may work incalculable mischief.

We can generally assure the parent that the disease is itself limited, and with a little aid from art, nature herself effects a cure; but it is a matter of years, and that inasmuch as the disease does not originate in any physical defect, no mechanical device alone, can cure it.

A PAPER INTRODUCTORY TO A DISCUSSION ON THE TREATMENT OF TUBERCULAR DISEASE, MEDICAL AND SURGICAL.

BY NELSON L. NORTH, M.D.,

Consulting Surgeon to the Methodist Episcopal Hospital.

Read before the Kings County Medical Association, October 14, 1890.

Tuberculosis, taken comprehensively, includes a wide range of disease. A discussion on the treatment of tubercular disease, medical and surgical, must of necessity be permitted to include all pathological conditions having a tuberculous origin. With the present consensus of opinion as to the pathology of tubercular disease it will be impossible to discuss fully the treatment (including prophylaxis) of pulmonary

phthisis without at the same time taking into consideration the care, operative and medical, to be given to chronic abscesses, enlarged glands, chronic joint-diseases (under a variety of names), many of the diseases of the bones, of the brain, and a long list of what a little time ago were denominated scrofulous maladies.

The discussion of the evening, then, includes too much—has already too large a latitude for thought and expression to admit of more than a reference to the pathogeny of tuberculosis. We can hardly introduce the subject intelligently, however, without a word or two as to its causation.

It would be strange, indeed, if some gentlemen here to-night did not insist upon the use of the terms “diathesis,” “heredity,” “tubercular tendency,” etc., in the old sense.

Still Dr. J. C. Wilson, Physician to the Hospital of the Jefferson Medical College, of Philadelphia, in an exhaustive paper on the “Prophylaxis of Tuberculosis,” read before the American Medical Association, in June, 1889, well says, in his opening paragraph: “This communication is based upon the fact, now incontrovertible, that the tuberculous diseases, including pulmonary phthisis, are specific infections, due to a common cause, namely, the tubercle bacillus of Koch.”

And yet—and yet—the whole nor the half has not been said that ought to be said in reference to the things, in civilization, in hygiene, in climate, in mode of life, in relation to food, and in the thousand and one aids that go to prepare the human body in its different parts so that it may take on the tuberculous condition, or, so to speak, encourage the growth of the tuberculous germ.

It is very needful to *study* further the habitat of the plant called the tubercle bacillus and to learn more of its condition of growth, not only with reference to the “culture-media,” but in relation to its development in the living animal-tissue.

It is said to grow only with difficulty below 86° F. and to be destroyed by a temperature of 107° F. or over. How near do these conditions hold in the living organism? Certain substances, known as germicides, destroy them out of the body. How much do the living organisms, in which they develop to produce disease, *resist* or *assist* the germicide? What has been done, or what can be done, to overcome this resisting power of the tissues or to encourage and re-enforce the inherent germicidal power of the liquids and solids of the living animal-tissue? Under what conditions do certain lives easily assume or develop what has heretofore been called hereditary disease? And what condition may be more or less easily produced in others, by unhygienic influences or unfavorable climatic surroundings, that will

answer to what we have heretofore known as diatheses, whether cancerous, scrofulous, or tuberculous? Why do certain individuals succumb to bacillar influence—as of typhoid fever, for instance—when other members of a community have ingested like germs in the same contaminated water supply without disease? And why do certain classes of individuals succumb to the bacillus tuberculosis when others, subjected to the same influences, who, perhaps, have partaken of the same tuberculous milk, remain well absolutely?

These are some of the important questions of the day which, while they have received much attention, are not yet satisfactorily answered. Bacteriology—including minute anatomy, organic chemistry, vivisection, with careful experimental research—has done much, *very much*, in this line of work, but each and all combined have yet much to do. Those of our brethren who patiently toil in the laboratories—of whom only occasionally *one* receives anything like proper credit or remuneration—have yet much to do, much to sacrifice. The general medical practitioner cannot answer these important questions. Meanwhile, as Dr. Shrady, of the *Medical Record*, has well said, editorially:

“It may be that we are not different from other men, yet it would seem as though medical men might be justly called the Athenians among men of science, in that they ‘employ themselves in nothing else but either in telling or in hearing some new thing;’ and when they have found that new thing, they let everything else go and cling to that alone.

“It is thus with the study of bacteriology. It has been ascertained almost to a certainty that the tubercular process, for example, is associated with a certain form of microscopic growth which is not found as an accompaniment of other diseases. It is therefore assumed—correctly, no doubt—that this micro-parasite is the cause, either directly or indirectly, of tuberculosis.

“Other microbes have been found in relation with other diseases, and it has also been assumed that a casual nexus exists. This is well enough: it is a plausible theory, and one that offers great hope of advance in the therapy of certain diseases, and if it does not blind us to actual necessities of treatment, and lead us to neglect the plain indications while running after some specific microbicide, there is no objection to its further study and amplification.”

As Dr. Shrady intimates, there is *danger*, in this *one* thought of a *specific germicide*, that the plain duty of rational treatment and care of disease shall be neglected. There even seems in some quarters a tendency to neglect to use the means, ‘hygienic, climatic, and restorative, that have been found to allay symptoms, and, in the earlier stages, to restore health even to consumptives.

Amid this general expectancy among the profession—as among the laity—for a specific germicide for the bacillus tuberculosis, we are not only like the Athenians, constantly “in search for some new thing,” but there is a possibility, in this looking for a something to act in a specific form or way, that we may overlook the *remedy* when it shall be found, and so be not unlike the Jews of the time of Christ: in constant expectancy of the Messiah, yet rejecting the Saviour when he comes.

If it were not so serious a matter, it would be exceedingly amusing to listen, at times, to medical discussions, and see how easily men, who ought to be more careful with their words, *reject* and even ridicule suggestions for treatment of disease because these suggestions do not exactly agree with their own thought in the matter. Thus the methods of treating consumption by the pneumatic cabinet, by disinfectant injections, or the hot-air treatment, are easily disposed of, in medical societies and in medical monographs, not by careful trial, but by flippant criticism and rejection, and the assertion that thus and thus are the facts; and so the *ipse dixit* of men who *would be* authorities sets aside even what is good and of value in these treatments, which are generally the results of careful thought and study on the part of men who have faithfully tried to answer the vexed question we are all asking, viz.: What will destroy the bacillus tuberculosis, and so cure consumption?

It is said that the liquids of the animal body, when in a proper normal condition, are bacillicidal, and that certain forms of bacteria work the destruction of other forms.

Any farmer's son, or cowboy of the West, will tell you that there is no better remedy for “chapped hands” (a painful condition, caused by exposure to cold and lack of cleanliness) than recent urine. “It is healing”—antiseptic—in its effects when freely applied to that or other eczematous conditions.

A German woman of the middling class, but observing, once assured me that a friend of hers had been *cured of consumption* by the free use (taken internally) of *recent* urine.

Liquor amnii, as is well known, is aseptic, and probably antiseptic, being protective to the mother and the child, and no doubt oftentimes protective to the hands of the accoucheur.

Bacteriologists (if I mistake not, Prudden among others) tell us that recent blood-serum (according to Buchner, the albumen in the blood-plasma is the destructive agent of the bacteria) is a bad culture-medium for some of the forms of the disease-germs. It is very likely that an abnormal condition of these organic liquids tends to develop bacterial growth within the body, more especially certain special forms

thereof, as of the cancerous, scrofulous, or tuberculous, and thus we find developed in such individuals special cachexias, diatheses, etc.

It seems to be a law of nature that when organic matter (whether vegetable or animal) dies, when vitality ceases in it, *germs*, either microscopical or macroscopical, immediately develop in it or around it, and cause a chemical action, or assist a chemical action, or are caused by a chemical action, which sooner or later work its utter decomposition and destruction as such organic substance or matter. This being a fact, is it not probable that, as organic matter (a human body, if you please) *weakens*, lessens in vitality, the liquids and perhaps solids assume a condition—abnormal, of course—in which germ-life (just in proportion to the loss of vitality in the individual) grows, develops, and, by the time the individual dies, has complete control of the carcass (hence come perhaps the poisonous alkaloids which make autopsy-wounds so fatal); and that the constitutional condition, peculiar to, or favoring the growth of the tubercle bacillus, for instance, after generations of repetition, is transmissible from parent to child. And thus we have the explanation of heredity, and can understand that, as a rule, not the disease itself is transmitted, but the *tendency to the disease*—the condition of body well adapted to the growth of the germ and to this development of the abnormal condition.

To prevent the disease, then, we must prevent the implantation of the germ, or change or prevent this condition of the body so peculiarly adapted to germ-growth, or both.

What we want now, it would appear, is to call a halt in this mad rush after *new* things—after a specific for tuberculosis, if you please—and take a retrospective view, as well as a prospective, combine old thoughts and things with new, and so endeavor, through the light of the present, to understand the *modus operandi* of what the fathers in medicine learned by observation. It may be in this way we shall discover that, in part at least, what we have been so diligently searching for is already within our grasp, and that we need only to understand how to use it.

[TO BE CONTINUED.]

PERSISTENCE OF THE TYPHOID BACILLUS IN THE BODY. —Chantemesse reports a case of typhoid fever with relapses extending over five months. Orloff has published a case in which a pure culture of the typhoid bacillus was obtained from an osteo-myelitic abscess nine months after the beginning of the affection. Achalme has reported a similar case. These cases are rare, but they teach the possibility of prolonged infection in typhoid.

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EDITORIAL.

ANÆSTHESIA AND FORCED RESPIRATION.

Two recent deaths in Brooklyn, following the use of anæsthetics, have again directed the attention of the public and the profession to the dangers connected therewith. In one the death was due to the self-administration of chloroform by a physician for facial neuralgia; in the other, death followed the use of but four drachms of ether, administered in the usual way and with the usual precautions by careful and painstaking physicians. Both deaths seem to have been unavoidable, and in the death from ether all means of resuscitation generally regarded as efficient were employed, but without avail.

In reading the history of these cases, the writer was reminded of the method of forced respiration advised and employed by Dr. George E. Fell, of Buffalo, for the resuscitation of persons in asphyxia, and the thought occurred whether in such cases this method would be efficient. Dr. Fell's method consists in first introducing a tracheotomy-tube, or in suitable cases using a face-mask without tracheotomy, and then, by means of a simple bellows, worked by hand- or foot-power, a steady stream of air is forced into the lungs, over-inflation being prevented by a valve, which is under the direct control of the surgeon.

Up to the present time Dr. Fell has made use of his method in eleven cases, seven of which recovered. Indeed, after a perusal of the history of these cases, it is not too much to say that seven lives have been saved by him which would inevitably have succumbed had the ordinary

methods of resuscitation been alone resorted to. The asphyxia was in all the cases, but one, due to opium or morphia, and in none was an anæsthetic the responsible cause. Nor do we know that this method would be as successful after an anæsthetic as in the instances referred to; but our experience in the resuscitation of dogs, whose breathing has ceased after the administration of ether and chloroform, leads us to believe that it would be well worth the trial. Indeed, it was this observation of Dr. Fell in his physiological experiments which first led him to the use of forced respiration in asphyxia.

The question may well be asked whether, in light of the success of Dr. Fell, our whole duty is done until the forced-respiration method has been tried in all forms of asphyxia. We commend to our readers the papers of Dr. Fell, which are published in the "Transactions of the New York State Medical Association" (1888, 1889), and in the Buffalo *Medical and Surgical Journal*, of March, 1888. His long-continued efforts to save human life—in one instance extended over twenty-four hours, and with a successful result—certainly deserve the warmest commendation. And no surgeon can afford to ignore his method without having first given it the fullest trial.



THE EPIDEMIC OF INFLUENZA.

One of the most striking papers we remember to have read was prepared, some years ago, by Dr. Benjamin Lee, of Philadelphia, on the cost of an epidemic of small-pox to the people of that city. This paper gave not only the actual loss which was incurred by the sickness and death of so many active individuals in the community, but the prospective loss as well of their services and of those of the children who succumbed.

Such a paper, dealing with the epidemic of influenza of 1889-'90 for all the countries visited, would contain statistics which would be inconceivable in their proportion. The cost to England alone, is estimated at \$10,000,000: one-half of this amount having been paid to insurance companies of various kinds, the other half representing loss of wages, etc. All of this was not a loss to the community, for presumably the money paid for insurance remained to a great extent in the country; but even leaving this out of the account, the actual cost was enormous, doubtless far surpassing the figures quoted.

It is to be hoped, as well for economic as for other reasons, that the fears of some, that the epidemic is to reappear this year, will not be realized.

KOCH'S CURE FOR CONSUMPTION.

The sensation of the past month has been the announcement that Koch has discovered a cure for consumption. This has come to us principally through the lay press, although within a few days Koch himself has made a contribution on the subject to the *Deutsche Medicinische Wochenschrift*. If we understand the matter aright, Koch regards it as still *sub judice*, and has appeared in print only because his researches have been publicly communicated through the press in such form as to demand that he should put himself right before the profession. It is too early to pronounce the treatment a success and the greatest boon to humanity of the nineteenth century, etc., etc. It is a subject of such vast importance that we can well afford to wait until Koch has himself declared it a success and has submitted to the world his methods, which are as yet unknown except to a favored few.

COUNTER-PRESCRIBING.

The evils of counter-prescribing have become so great in St. Joseph, Neb., that some of the physicians of that city have determined to test in the courts the rights of druggists to prescribe for the sick. It is said that a syphilitic was being treated by a drug-clerk of the town under a contract to cure him in four months at the rate of \$6 per month.

That this practice is largely indulged in in Brooklyn, no one at all familiar with the facts doubts; and any effort to mitigate the evil here would be to the advantage of both the purse and the welfare of many a poor sufferer.

OBITUARY.

GEORGE F. LLOYD, M.D., AND J. E. GREGORY, M.D.

The death of Dr. George F. Lloyd, at the Kings County Hospital, by the hand of an assassin, and that of Dr. J. E. Gregory, of 414 Clinton Street, by the self-administration of chloroform, for the relief of facial neuralgia, have been announced. As both physicians were members of the Medical Society of the County of Kings, we shall defer the publication of obituary notices until the committees appointed for that purpose shall present their report.

PROCEEDINGS OF SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular monthly meeting of the Medical Society of the County of Kings was held at the Society rooms, 356 Bridge Street, Tuesday evening, October 21st, at 8 o'clock.

Dr. Walter B. Chase in the chair; Dr. Myerle, Secretary.

There were about 100 members present.

The minutes of the previous meeting were read and approved.

The Council reported favorably upon the following applicants for membership, and recommended that they be duly elected:

Drs. Clarence W. Sheldon, William C. Braislin, Martin Amador, H. Messenger Ayres, Wilbur L. Rickard, Arthur E. Smyle, Sidney Herbert Gardner, F. E. Boyden, and M. J. Leland.

The following applications for membership were presented:

Dr. John O. F. Hill, Coney Island, L. I. C. H., 1886; proposed by Dr. Thos. Wilde, seconded by Dr. W. M. Hutchinson.

Dr. J. Barney Low, 221 53d Street, Georgetown Med. Coll., 1881 (Washington, D. C.); proposed by Dr. Geo. H. Parshall, seconded by Dr. W. M. Hutchinson.

Dr. Wm. Newman, 574 Lafayette Avenue; proposed by Dr. M. E. Parrott, seconded by Dr. W. B. Chase.

Dr. James M. Griffin was declared elected to membership.

SCIENTIFIC BUSINESS.

The first paper of the evening, entitled "The Dangers of Suturing Recent Fractures of the Patella," by Dr. Geo. R. Fowler, was read, and discussed by Dr. Pilcher.

Dr. E. S. Bunker read the second paper of the evening, entitled "The Surgery of Pelvic Abscess, with a case of Laparotomy," which was discussed by Drs. Jewett and Fowler.

Dr. J. B. Mattison presented a "Note on Hypnol, the new Nervine," which was discussed by Drs. Eccles and Burge.

UNFINISHED BUSINESS.

The chair stated that in the absence of the Secretary and Treasurer the matter of the membership of the late Dr. Lloyd was somewhat in doubt, but that the question would be taken up later to determine whether he had completed his membership before his death, looking toward the appointment of an Obituary Committee to take proper action relative to the same.

There being no further business, on motion the Society adjourned.

DAVID MYERLE,
Assistant Secretary.

PROGRESS IN MEDICINE.

SURGERY.

BY GEO. RYERSON FOWLER, M. D.,

Surgeon to St. Mary's Hospital, and to the Methodist Episcopal Hospital, Brooklyn.

A MODIFICATION OF THE INTESTINAL SUTURE FOR THE FORMATION OF AN ANASTOMOSIS BETWEEN TWO PORTIONS OF INTESTINE.

Dr. Willy Sachs, Berne (*Centralblatt f. Chirurgie*, No. 40, 1890).

The author offers a simplification of Senn's method, by means of decalcified bone plates, as follows: The bowel-loops are fixed side by side and a longitudinal incision made in each in the usual manner. A "cuff-button" made of decalcified bone, and through the centre of which a canal is bored, is then placed in position and sutures passed through the peritoneal surfaces only, with the view of attaching serous surface to serous surface, without invading the mucosa with the needle and thereby forming a centre of infection between the interior of the intestinal canal and the peritoneal cavity, as it is claimed occurs in Senn's method. A greater simplicity of technique is likewise claimed for this modification. Experiments upon rabbits form the basis of this proposal; the method has never been employed upon man.

STERILIZATION OF CATGUT AND SPONGES BY DRY HEAT.

Benckiser (3d Congress of the German Gynæcological Society, 1889, *Centralblatt f. Chirurgie*, No. 37, 1890).

B. proposes to sterilize catgut by means of dry heat, exposing it in Rohrbeck's sterilizer to a temperature of from 130° to 140° C. for two hours. The gut is rendered hard and brittle, but by immersing it for a short time previous to the operation in either sterilized water or carbolic acid solution, it becomes soft and pliable. Catgut, infected by means of staphylococcus, and then exposed to the above temperature, showed sterilization to be complete. Such catgut, employed in puerperal perineal suture, and in perineorrhaphies after Lawson Tait's method, gave uniformly good results.

Sponges are sterilized in the same manner.

HÆMATURIA IN NEOPLASMS OF THE BLADDER, AND ITS OPERATIVE TREATMENT.

Guyon (*Gaz. des Hôpitaux*, 1890, No. 66).

The author, in reporting a case of tumor of the bladder, in a thirty-year-old male, offers some original observations upon the subject of vesical neoplasms, and their diagnosis and treatment. A positive diagnosis by means of the endoscope is considered of the greatest import-

ance. The extent of the hæmorrhage is no criterion of either the size or character of the growth; a comparatively insignificant papilloma is frequently the occasion of a very serious hæmorrhage.

The supra-pubic route is chosen in reaching the interior of the bladder; after opening the latter, the growth is seized by means of two hook-shaped forceps and brought as nearly as possible into the middle of the field of view. The pedicle is then excised, together with a portion of the surrounding bladder wall.

The author does not favor the complete suturing of the bladder wall at the site of the supra-pubic incision, but prefers to introduce a drain at each end of the incision, suturing the intervening space, which latter are removed at the end of ten days, as a rule. The solidity of the cicatricial tissue, which finally marks the site of the operation, according to G., is in no way interfered with.

A HERETOFORE UNKNOWN DANGER DURING OPERATIONS UPON LARGE
AND OLD INGUINAL HERNIA.

Prof. Kuester (Berlin).

The author calls attention to a new complication which may be met with in the course of operations for the reduction of old large inguinal hernia. In a case cited in which the protrusion, the size of a child's head, and which had remained unreduced for upwards of a year, the operation for radical cure was resorted to. Without the slightest evidences of either nausea or vomiting, the patient gradually became cyanosed, with shallow breathing. This occurred synonymously with the attempt to reduce the contents of the sac; during this effort it became plainly evident that the abdominal space was too small to permit of reposition, and K. determined to resect a portion of the cæcum, together with the vermiform appendix, which was distended with enteroliths, which still remained unreduced. When the above mentioned untoward symptoms manifested themselves, artificial respiration was resorted to, but no improvement followed. Rapid tracheotomy gave ingress to air, but the patient had passed beyond restoration. A mass of partially digested food escaped from the trachea after being opened. This had been forced out of the stomach along the œsophagus into the pharynx, and thence by the respiratory act into the larynx by the mechanical pressure incident to the attempt at reposition of the hernial mass.

K. suggests that in all such hernia cases, the stomach be washed out preliminarily to the operation.

STRICTURE OF ŒSOPHAGUS.

Terillon (*Progrès Méd.*, 1890, No. 13).

The author reports a case of impassable stricture of the œsophagus, in which, after pulmonary gastrotomy, through which the patient was

fed for eight months, a subsequent dilatation of the stricture, through the stomach, was accomplished. The patient, a fifty-three-year-old man, had first noticed difficulty in swallowing, coming on suddenly and followed by loss of weight, five months previously, although gastric disturbances had existed for years. The stricture was found to be cicatricial in character, and yielded to continuous dilatation. The fistula was almost completely closed, after restoration of the normal calibre of the canal, and the patient resumed feeding *per vias naturalis*.

THE SEAT OF STRANGULATION IN FEMORAL HERNIA.

Nicaise (Revue de Chir., 1889, No. 12).

The author rejects the formerly held opinion that the seat of the strangulation in femoral hernia, is at the falciform process of the fascia lata, or at the inner edge of the cubrifform fascia. On the contrary, the strangulation is always, according to N., in the depths of the septum crurale, through the meshes of which the hernia passes, and becomes established through the formation of what the French call the "accidental hernial ring;" that is to say, by the existence of fibrous bands which are always found to exist, in old herniæ in this region, about the neck of the sac. In many instances it is only necessary to separate these bands in order to render possible the reduction of the hernia, the hernial sac not being necessarily opened for the purpose.

[Although in these antiseptic times the opening of the sac is not held to add to the danger of the operation, yet the point made by Nicaise may be of value in exceptional instances. G. R. F.]

UPON THE ANTI-BACTERIAL ACTION OF PYOCTANIN.

O. Petersen (St. Petersburger Med. Wochenschrift, 1890, No. 27, Centralblatt f. Chirurgie, 1890, No. 41).

P. employs: 1. Pencils of yellow or violet aniline coloring material, *per se*; 2. Pyoctanin with powdered talc, in the proportion of 2 per cent.; 3. solutions of 1-2000, 1-1000, 1-500 and 1-100. Patients treated were mostly those suffering from venereal affections; in a postscript there are added several hundred patients with soft chancre. This medicament has the advantage over iodoform, of being free from odor; on the other hand it produces what may be deemed by some a very disagreeable result of its use, namely, deep discoloration of the hands and linen. The use of dilut. hydrochloric acid is recommended for the removal of these from the hands by P.

The following conclusions are reached by P.: 1. Pyoctanin, the yellow as well as the violet, used as pencil or powder as well as in solution, possesses undoubted anti-bacterial action, in infected as well as in non-infected wounds and ulcerations. Its action is as positive as

iodoform, and possesses the advantage of being odorless. 2. Pyoc-tanin acts favorably, not only in diseases of the eye, but in soft chancre and in gummatous ulceration. Unfavorable symptoms or toxic effects have not been observed as a result of its use.

The agent is suggested for use in urethritis, but the objection is raised by P. that here, as well as in the irrigation of large wounds in general practice, its use will not become popular in general sur practice, on account of the above mentioned discoloration of the c ing.

OBSTETRICS.

BY CHARLES JEWETT, M.D.,

Professor of Obstetrics and Diseases of Children and Visiting Obstetrician, Long Island College Hospital; Physician-in-Chief of the Department of Diseases of Children, St. Mary's Hospital, Brooklyn.

INJURIES TO THE URETERS DURING LABOR.

Skene (*Trans. Am. Gyn. Soc.*, 1890). The ureters are liable to be injured in tedious labors, particularly when complicated by instrumental interference. Suppuration within the ureters and death by extension to the kidney may result. Most cases, however, fortunately, terminate in recovery.

Local tenderness may be present, but more frequently the diagnosis will depend mainly upon the exclusion of other puerperal diseases.

The writer relates an illustrative case in which the woman died suddenly in convulsions two weeks after labor. The left ureter was found to have been injured at a point one and a half inches above its vesical end. It was occluded at the seat of injury and above that point was distended with pus and blood. An acute nephritis had developed on the corresponding side.

Among the lessons taught by the paper are the importance of examining the ureters after death with uræmic symptoms, and the danger of injuring those organs by the mal-adroit use of forceps in a high operation.

CEPHALIC VERSION PREVIOUS TO LABOR FOR BREECH PRESENTATION.

Southwick (*Am. Jour. Obstet.*, Oct., 1890). Dr. S. first alludes to the mortality of head-last deliveries, quoting various authors to the effect that in from 13 to 25 per cent. of spontaneous breech births the children are lost. This he believes would be a low estimate of the mortality as cases go in general practice. He therefore recommends in suitable cases cephalic version two weeks before labor by combined abdominal and vaginal manipulation. The principal indications are

primiparity, an ample pelvis but not exceeding the ordinary size, and a large child. The operation is contraindicated in pelvic contraction, in which breech extraction is better. His method he describes as follows: The woman is placed in a semi-recumbent posture with the legs and thighs well flexed. Two fingers of one hand are passed into the vagina and placed against the uterine wall under the breech. The breech is coaxed toward that side of the abdomen corresponding to the child's back. It is then carried well outward, the external hand assisting by manipulation over the pelvic extremity of the fœtus. The external hand is now applied over the cephalic extremity and the head pushed downward into the excavation. Should the head refuse to sink easily into the pelvic brim, the version is completed by external manipulation with the hands over opposite poles as in the usual technique of external version. (The author's estimate of the mortality of breech births is high for the modern method of breech extraction. With the Smellie-Veit or the Wigand-Martin method not more than 5 per cent. of the children should be lost in good hands.)

The Wigand-Martin method, it will be remembered, consists in traction with the fingers of one hand upon the inferior maxilla to keep the chin against the sternum, and powerful suprapubic pressure applied with the other hand to crowd the head through the pelvis.

Four weeks prior to labor is a better time than two for the preliminary abdominal examination and the version, since the mobility of the fœtus is greater at that period.

The procedure recommended by Dr. S. is apparently an improvement upon the usual technique of external version.)

HYPEREMESIS GRAVIDARUM.

Flaischlen (*Zeitschr. f. Geb. u. Gyn.*, B. xx., H. 1). It is generally conceded that complicating causes, such as gastric or intestinal disease, uterine misplacements or peri-uterine inflammation and others, often play an important part in the etiology of the vomiting of pregnancy. Their influence is greatly augmented by the increased nervous irritability of gestation.

The pelvic reflex is referred by Hewitt to pressure upon the uterine nerve filaments. Leopold attributes it to stretching of the nerve plexuses. Klotz invokes ovarian lesions as the cause, believing that adhesions and some degree of consequent violence to the ovary are the source of the reflex disturbance. Horwitz attaches importance to racial peculiarities. Nationalities are found to differ in their liability to this disorder. The fewest cases occur in Germany, the most in France. Brock lays stress upon individual idiosyncrasy; Fischel upon the increased nervous irritability. Chazan considers the disorder psycho-

pathic. Roughton attributes it to fatty degeneration of the liver; Holladay to the growing corpus luteum; Schroeder to excessive distention of the uterus and to inflammation of the endometrium. Horwitz believes the lesion is more frequently a parenchymatous inflammation. Bennet limits it to the cervix.

With reference to treatment, the author thinks the expectant plan is carried too far. There is danger of sudden collapse in the exhausted condition of the nervous system. He advocates prompt interference in the presence of grave symptoms. The tendency he thinks is to operate too late.

PRACTICE OF MEDICINE.

BY HENRY CONKLING, M.D.,

Pathologist and Assistant Visiting Physician to St. Peter's Hospital; Physician to the Department of the Chest, Brooklyn City Dispensary.

TREATMENT OF DIABETES.

Dujardin-Beaumetz (Cochin Hosp. Lectures, in Therapeutic Gazette) advises that a most rigorous dietary be prescribed. Eggs, meat, fowls, and green vegetables are allowed. Fatty food is useful and may be in the form of oils, fish canned in oil, bacon, pork, and butter. Gluten bread is allowed. The patient may take at each meal three ounces of boiled potatoes. All starchy foods are forbidden. *Nor is milk allowed.* Tea and coffee may be sweetened with saccharin. It is important that sauces and gravies containing flour should not be used. Wine may be taken diluted with Vichy. Distilled liquors are prohibited. A combination of carbonate of lithium with a small dose of liquor potassii arsenitis is given twice a day. Fifteen grains of antipyrin are given after each meal. The author considers it important that the mouth should be thoroughly cleansed after eating. A boracic acid antiseptic solution is recommended. A sponge bath with warm water, followed by vigorous rubbing, is strongly advocated. It is considered highly important that the cutaneous surface should be in a state of well marked activity. Mild exercise, regular in its performance, is an adjunct to treatment. The author condemns the skimmed milk treatment of Donkin, believing that the use of milk increases the amount of sugar excreted. The lactose has, in addition, a well marked diuretic action. Saccharin may be freely given, and but rarely produces any unpleasant effects. The author evidently believes the polyuria of diabetes to be of neurotic origin. Antipyrin, phenacetin, and exalgin may all be used to reduce it. He mentions cases where the urine was greatly reduced.

The amount of sugar is also reduced by antipyrin. The author considers the question of the duration of the diabetic diet. From the conclusion which he draws, it would seem that an improvement in diabetes is to be expected rather than a cure. If the former is obtained the author is satisfied with his treatment. The careful diet is continued until the sugar has entirely disappeared or is much diminished. Then, on the ground that the prescribed diet, if too long continued, will enfeeble the patient, a more generous allowance is given. This may cause a reappearance of the sugar, but *if the amount be not over 150 grains a day, the glycosuria is not considered deleterious to the patient.*

ULCER VENTRICULI.

McCall Anderson, of Glasgow, has analyzed a series of 35 cases of ulcer of the stomach occurring in hospital practice. These particular cases were taken from a medical service of 2,538 cases, a percentage of about $1\frac{1}{3}$; 3 of these were males, 32 were females. The proportion of the former was found to be 1 in 537; that of the latter 1 in 29. The minimum age given is 17; the maximum is 60. The greater number of cases occurred between the ages of 20 and 40. The length of time that the patients suffered before admission into the hospital varied from one month to three years; 11 of these cases had had previous attacks. Recurrence is commonly found. The author found the *appetite* variable. It sometimes remained good throughout the attack; *pain* was described by the patients as being of a burning, gnawing, shooting, cutting, dragging, and dull character; it came on either immediately after the ingestion of food, or in varying times up to one hour, lasting from two to three hours; *tenderness* was found in many cases, generally in the epigastrium; *vomiting* was present in 22 cases; with the occurrence of vomiting the pain generally ceased; *hæmatemesis* was profuse in only 6 cases; *constipation* was the general rule. One of these cases died from hæmorrhage, a post-mortem examination revealing a perforation of a vessel near the pylorus. The only new point in treatment is an excellent suggestion concerning the use of Carlsbad salts. From one to five drachms may be administered. This amount should be dissolved in a pint of boiling water, and, when cool, taken in four-ounce doses at intervals of ten minutes. This should be taken in the morning. By acting as an aperient, neutralizing the acidity, and stopping fermentation, the "Carlsbad" aids the reparative process.

DEATH FROM ETHER AND CHLOROFORM.

Two cases of death under an anæsthetic have been lately reported. The first was from chloroform and occurred in St. Thomas' Hospital, London. The patient was suffering from pyo-pneumothorax. Rib-resection was to be performed. The amount of chloroform given was

small and had just produced anæsthesia, when there occurred, quite suddenly, dilatation of the pupils and pallor of the cheeks, followed immediately by the cessation of the action of both heart and lungs. It is stated, in the report, that death was probably due to cardiac failure, accelerated by the diseased condition of the lungs. On post-mortem examination the heart was found normal. Whether death came from the heart or the lungs, the case, in its results, is an extremely important one. It emphasizes the fact that operations upon the pleural cavity, where the lung of the affected side is in a state of partial atelectasis, should be performed without the aid of general anæsthesia. Especially is this true if there be any pulmonary tuberculosis. A certain amount of shock resulting from the pain is better than the effects of an anæsthetic. If a rib is to be trephined, great care should be used in choosing the anæsthetic, as its use here is probably unavoidable. *It is doubtful if it is ever wise to irrigate the pleura cavity when a patient is under an anæsthetic.*

The second death was from ether, and occurred in Wolverhampton Hospital, England. In this case the administration of the ether had been stopped and the wound was being dressed, when there occurred a deep inspiration, pallor, dilatation of the pupils, and cessation of breathing. The post-mortem examination showed a fatty heart, with right ventricular hypertrophy. Death in this case, as in the first, occurred very suddenly.

PATHOLOGY.

BY JOSHUA M. VAN COTT, JR., M. D.,

Pathologist and Lecturer on Histology and Pathological Anatomy, Long Island College Hospital; Associate Director of the Department of Histology and Pathology, Hoagland Laboratory; Pathologist to the Brooklyn Throat and Nose Hospital.

OCCASIONAL ABSENCE OF CASTS IN NEPHRITIC URINE.

E. Sehrwald (Deutsch Med. Wochenschrift, 1895, No. 24). Author calls attention to the fact that not infrequently casts are absent temporarily in the urine of typical nephritis, accompanied with albuminuria, and that even different hours of the day yield different results in the quantity of casts, where the elimination of albumen is in constant quantity.

The urine containing but few casts reveals a greater number of granules and free nuclei, while the cylinders are finer and paler than those in richly loaded urine.

These facts point to solution, after formation, of the casts which may be the result of a simple chemical process—the normal properties

of acid urine being reversed in albuminuria—or through putrefaction and consequent alkalinity of the urine. More often solution of casts comes from the presence of pepsin in the urine, so that the number of visible casts is constantly diminishing as long as the urine remains in the bladder, or out of it in a warm room. Examination of urine for casts then should be conducted with portions of urine which have only remained in the bladder for a short time, and these samples should be allowed to settle the shortest possible time to insure the deposit, in a low temperature, and with the addition of a few drops of chloroform. The author is of the opinion that peptic digestion of the casts may occur even in the kidneys when the casts are locked fast in the uriniferous tubules.

[S.'s point seems to be perfectly well taken, and cannot fail to be of great practical interest to those who recognize the importance and diagnostic value of thorough microscopical examination of urine in cases of suspected renal disease.—V. C.]

CONTRIBUTION ON FAT EMBOLISM.

Reddingius (*Weekbl. van het Nederl. Tidschr. voor Geneesk.*, 1890, No. 7]. Fat embolism is not as rare as usually claimed, and not always dependent upon traumatism. Many experimental investigations prove the possibility of its presence in various diseases, therefore the origin of emboli cannot be sought alone in the marrow of bones. R. made the following experiment: He tied the vena jugularis of a rabbit with two ligatures, and into the swollen vein introduced the canule of a Pravaz syringe. The head of the animal was then brought to an angle of 60° with the body, and 1 grm. of a suspension of calomel vap. parat. 0.05 in sol. nati. chlor. 0.75 : 100 injected. The vein was then unbound on the side from the opening, and the skin wound sewed up, and a half hour later the animal beheaded. Fat droplets are now found in the arteries, and after three to four days plugging up the arteries with fat. Fat embolism thus occurred without injury of the animal or crushing of tissues containing fat. In control animals simple injection of salt solution produced no fat emboli, neither did beheading. Intra-muscular injection of calomel in suspension failed to produce, after three days, any emboli in a rabbit. The author reasons that these results explain the occurrence of fat emboli in the pulmonary vessels of patients into whose veins are accidentally injected suspended calomel.

[Another motive for the utmost caution in the use of hypodermic medication.—V. C.]

ON THE PROTOZOAN AND COCCIDIAN FORMS OF MICRO-ORGANISMS IN CANCER CELLS

Schütz (*Münchener Med. Wochenscher*, 1890, No. 35). Latterly many amœba, protozoid and coccidian forms of micro-organisms have

been described as found in cancer cells, as regular appearances in and causes for the development of cancer cells. S. confirms the regular occurrence of these forms, but believes their origin to be of a different nature. Since in Flemming's solution they color red-brown in common with the red blood corpuscles, and since these latter, as is well known, extravasate and find their way into the cancer cells, he believes these forms described by others to be really the red corpuscles which are either entire or in fragments or in masses fused together from the material of the red corpuscles.

AN INTERESTING DISLOCATION OF THE CAPUT COLI.

(Hoagland Laboratory, Dept. Histology and Pathology, Nov. 1890). At an autopsy at the Brooklyn Hospital the following interesting anomalous location of the caput coli and appendix was found. The appendix lay back of the caput coli, which rested in the left iliac fossa, being bound to the side of the sigmoid flexure by a short tough band of fibrous connective tissue about an inch broad. The appendix was three inches long and appeared perfectly normal. The ascending colon lay almost in the median line a little to the right, and it, with the transverse and descending colon, formed coils resembling those of an ordinary upright steam radiator. The point of interest here is the bearing this anomaly has on appendicitis and its surgical treatment. In this case, of course, the symptoms of the trouble would have all been left-sided and rather obscure, owing to the extreme posterior location of the vermiform.—VAN COTT.

OPHTHALMOLOGY.

BY RICHMOND LENNOX, M.D.

Assistant Surgeon, Brooklyn Eye and Ear Hospital.

DIAGNOSIS OF A PREDISPOSITION TO MYOPIA.

Nuel, of Liège (*Revue Générale d'Ophtal.*, May, 1890, p. 215), has found a peculiar arrangement of the disc and central vessels in high myopia, one which he has never seen either in hypermetropes or in emmetropes, and he concludes from this that it is a sign allowing one to decide in the majority of cases whether the eyes of a child are predisposed to high myopia or not.

In eyes of this sort the central retinal vessels instead of being directed as usual upwards and downwards, take, on emerging from the papilla, a more or less pronounced temporal direction. In the disc they lie in the prominent border of a physiological excavation which reaches the temporal margin, and as a general rule is associated with a semi-lunar atrophy of the choroid.

OBSERVATIONS ON OCULAR SYMPTOMS IN PERIPHERAL TRIGEMINUS AFFECTIONS.

Pain around as well as in the eye is a common accompaniment of many ocular affections, and this extra-ocular pain is probably caused by a central "irradiation." Symptomatic pain in the eye itself, however, as a symptom of trigeminus neuralgia has attracted but little notice, although such pain is by no means rare. When associated, as is sometimes the case, with some refractive or other ocular anomaly, one is only too easily led to ascribe the pain to the ocular trouble rather than to the changes in the peripheral nerves. Trigeminus neuralgia may, like every other, be due to central or peripheral causes, of which again the latter may be either intra- or extra-cranial.

Widmark (Kl. Monatsbl. f. Augenheil., Sept., 1890, p. 343) reports on the ocular symptoms dependent upon that form of trigeminal affection in which one finds actual changes about the end branches of the nerves. Henschen has studied this form and alludes to the sensitive band-like thickenings of the peripheral nerves, especially of the cutaneous branches of the ophthalmic division of the fifth pair. These thickenings extend in the course of the nerve and are doubtless due to some neuritic or perineuritic process. Henschen holds that these changes depend upon atmospheric influences and may well be regarded as rheumatic in their nature.

Every ophthalmologist has met with cases of asthenopia in which the correction of refractive or muscular errors has not given the desired relief, cases without uterine or ovarian causes of irritation to which the trouble could be conveniently ascribed, and these are the cases which have attracted Widmark's attention to the condition of the peripheral nerves about the eye. In about thirty such he has observed the following ocular symptoms:

Pain.—In, behind or around the eye, either dull and moderate or intensely acute and lancinating. Sometimes continuous, but of varying severity, or again intermittent, with irregular intervals.

Photophobia.—Usually present in moderate or marked degree, especially with artificial light. Reading, writing or the observation of brightly-lighted objects may be exceedingly difficult. Thus patients may find it very trying to sew on white material, while work on black may be comparatively easy.

Visual Obscurity.—During the actual attack the sight may be obscured, objects appearing veiled and indistinct. Examination at such times will, however, often show perfect vision, any apparent reduction being probably due to inability to fix the test-objects sufficiently accurately on account of the pain and photobia excited.

Feeling of Heaviness in the Eyelids.—Patients find it difficult to keep the eyes open, not only during the attacks, but even during the intervals.

Objectively the symptoms are usually slight. The most frequent is a moderate hyperæmia of the palpebral conjunctiva, sometimes associated with slight swelling of the lids. In unusually severe attacks there may be lachrymation and an extension of the hyperæmia to the bulbar conjunctiva. Occasionally one observes slight chemosis, sensitiveness of the globe to pressure, or pain on moving the eyeballs. Attacks may involve one or both eyes and may be excited by various causes, but notably by light and use of the eyes. The patients ranged in age from nine to sixty-eight years, and were usually women, often of the wealthy classes. Many of the cases showed a marked resemblance to those of *kopiopia hysterica* described by Foerster, but any dependence upon uterine trouble was excluded by the marked improvement after local massage of the affected nerves, and Widmark concludes that the diagnosis of *kopiopia hysterica* should only be made with caution, and never before an examination of the terminal branches of the trigeminus has been made. The local infiltrations (?) of the nerves observed by him were sometimes doughy, sometimes hard, perhaps œdematous, and either rounded or elongated in shape. Located in the subcutaneous connective tissue their presence was sometimes evident to the eye as well as the touch. The nerves most frequently involved were the frontal, supratrochlear and naso-ciliary, sometimes the temporal or malar branches as well. The treatment adopted consisted chiefly in daily local massage for about fifteen minutes (general tonics, correction of refractive errors by glasses, etc., having in many cases already proved unsuccessful).

The prognosis of these eye symptoms is very good as soon as their connection with the trigeminus affection is recognized and the massage treatment adopted. Occasionally the first treatment causes pain, but improvement usually ensues within one week, and complete relief often after not more than three or four. It must be admitted that relapses occur, perhaps after months or years, but usually yield readily to renewed treatment.

DISEASES OF THROAT AND NOSE.

BY WM. F. DUDLEY, M.D.,

Attending Physician, Department Throat and Nose, Dispensary of L. I. C. Hospital; Instructor in Diseases of the Throat and Nose, New York Post-Graduate Medical School and Hospital.

TUBERCULOSIS OF NASAL MUCOUS MEMBRANE.

Dr. Friedrich Hahn (*Jour. Resp. Diseases*, Aug., 1890). But few cases of this disease have been reported. B. Fraenkel has not observed a single case. Willigt found 1 case in 476 autopsies in tuberculous patients. In 1888 Kikinzi could collect but 28 reported cases.

Tuberculosis and lupus of nose should not be confounded. During initial stages the diagnosis of lupus is difficult, for the characteristic lupus nodules are not found in nasal mucous membrane in this stage. The disease resembles chronic rhinitis, with gradually increasing infiltration and destruction of cartilage.

The diagnosis of tuberculosis should be determined by demonstration of Koch's bacillus. Volkmann says that many cases of *ozæna*, which are supposed to result from hereditary syphilis, are really examples of tuberculosis.

In five cases reported by the author the disease originated in septum. In two, simple tumors were present, and in remaining three were formations of granulation tissue. Koenig says that nasal tuberculosis frequently appears as tuberculous fibroma, the microscopic examination revealing fibrous tissue and tubercles. The surface of these growths was smooth, except where there existed ulcerative process and bled easily. Two of the patients were anæmic and scrofulous, the others were healthy; there was no hereditary tendency. A swelling of the adjacent glands was observed in all the cases.

The treatment consisted in use of sharp curette and Paquelin cautery, followed by application of ointment of pyrogallic acid to all suspicious granulations.

The cure was prompt, but it cannot yet be said permanent until greater lapse of time.

Tuberculosis of nasal mucous membrane may manifest itself in three forms: 1. As an ulcer, flat, edges undermined, base covered with gray flabby granulations.

2. As smooth, solid tumors.

3. As lupoid proliferations.

In cases reported the microscopic appearances were same in all cases. Epithelium thickened where not destroyed. Free proliferation of stroma with round-cell infiltration, also giant cells containing tubercle bacilli.

Aristol powder insufflations are recommended in the atrophic forms of rhinitis, laryngitis, and pharyngitis. By acting as stimulant to the mucous glands, the secretion is increased and membrane rendered moist. In atrophic foetid rhinitis crusts are more easily detached. It is contraindicated in acute rhinitis and chronic coryza with profuse secretions, as it acts as irritant and increases the secretion.

CROUP AND DIPHTHERIA.

American Medical Association—Dr. Carl Seiler. Diphtheria and croup are two distinct and separate diseases.

Diphtheria is very contagious, and attacks persons exposed very suddenly, striking down people in apparently good health; and the probability of death depends entirely upon the amount of the poison

absorbed. There is also a characteristic odor from both the membrane and body of the diphtheritic patient.

Pseudo-membranous croup has slower onset; the child is ailing several days before the symptoms are pronounced; the disease is not communicated to others, and the peculiar odor of diphtheria is absent. Both diseases have in common a membrane and febrile movement. The membrane of diphtheria, however, is of yellow hue, the edges are sure to be turned or curled up, while in membranous croup the membrane is white, does not curl up, and the temperature is lower in proportion to the amount of febrile action present.

In criticism of these statements Dr. Solis Cohen remarked: If the condition known as membranous croup does exist, the affection must be local throughout its entire course and termination, not spreading to the pharynx or giving rise to constitutional infection.

The reasons for believing these two diseases identical are as follows: The disease may frequently present pharyngeal symptoms so slight, and preceding the serious laryngeal manifestations, that it is wrongly classed as a local ailment.

There are cases presenting no pharyngeal symptoms, no source of infection, yet the membranous cast of larynx and trachea has proved infectious and caused death.

The disease may ascend, beginning as low down as bronchioles, the pharynx being the last attacked. In very young children the dyspnoea from laryngeal obstruction may be severe enough to cause death before the disease has sufficient time to reach the pharynx.

The disease may be diphtheritic, and not manifest its contagiousness by being conveyed to other children exposed. A case is cited in which a child died from diphtheritic paresis, but two other children, constantly exposed, did not acquire the disease. The so-called characteristic odor is not always present.

In regard to temperature, while high fever very frequently accompanies diphtheria, yet the cases most to be feared are those in which the temperature is normal or subnormal, as this feature indicates great malignancy.

In both pharynx and larynx the diphtheritic deposit varies in appearance, thickness, and adherence with the intensity of the affection. In some cases it may be superficial and easily separated. In the larynx the lymphatic supply is less abundant than in the pharynx, so that an absence of constitutional symptoms is not to be regarded as proving a non-diphtheretic disease.

No positive diagnostic difference can be made between so-called membranous croup and diphtheria. It is recommended to discontinue the use of term "membranous croup," and adopt that generally used by foreign writers, "primary laryngeal diphtheria."

CHILDREN AND THEIR DISEASES.

BY JEROME WALKER, M. D.

PERICARDITIS IN CHILDHOOD.

Knoff (*American Journal of Medical Sciences*, Aug., 1890) reports ten cases. Of these, three were under one year of age; three between one and two; and four between six and ten. Pericarditis in the new born is usually due to a septicæmic process, starting in the maternal organism or else from the umbilicus of the child. In older children the conditions which predispose to pericarditis are tuberculosis, inflammatory processes of the pleura, lungs, sternum, vertebral column, bronchial and mediastinal glands, thymus and œsophagus, and of the abdominal organs and the peritonæum. In six of the cases reported by the author, the disease followed inflammation of the pleura and lungs; in one it followed chorea; in two scarlatina; and in one no cause was ascertained. In very young patients the diagnosis is difficult, frequently on account of the absence of ordinary physical signs. Autopsies made by the author showed that the exudation was usually not abundant, and hence it could not influence the position of the heart, the area of dulness, or the relative position of contiguous organs. The exudation was also fluid in character, without fibrinous deposit, and hence the absence of friction-murmurs.

CASE OF RECTAL OBSTRUCTION IN A CHILD.

T. Sympton (*British Medical Journal*, October 4, 1890). "A boy, æt. ten years, while spending a week with some relations in the country, ate a large quantity of wheat. The day after his return home he was noticed to have lost his appetite, and to be listless. In the evening he suffered greatly from abdominal pain, frequent and urgent desire to evacuate his bowels, and severe tenesmus. These symptoms increased in intensity. On the third day I was called to see him. On examination through the abdominal wall, the sigmoid flexure was felt to be greatly distended, and a few grains of wheat had been found in the bed. On examination, liquid was seen oozing from the anus, and the rectum was enormously distended. Under chloroform, a quart pot of wheat was removed, with complete relief to all the symptoms."

SCARLET FEVER AND SANITATION.

(*Brit. Med. Journal*, September 13, 1890.) At an inquest held at Sedgley near Wolverhampton, where a child had died from scarlet fever, it was shown that though the home of the child was in good condition, its surroundings were "filthy," there being an open stagnant well near the house and no proper drainage. It was also shown that the sanitary authority sanctioned the removal of night-soil during the day from the vicinity of the house.

EUCALYPTUS IN CATARRH OF THE RESPIRATORY TRACT AND OBSTINATE
COUGH IN CHILDREN.

Solomon Solis-Cohen, M.D. (Medical News, May 24, 1890). The author was led, by advice of Prof. J. M. Da Costa, to first try the fluid extract of eucalyptus in a case of obstinate cough. He says: "For internal use in bronchial and laryngo-tracheal inflammations the fluid extract seems to serve a better purpose than eucalyptol. In acute cases my usual custom is to administer it in connection with ammonium salts; in sub-acute cases a little paregoric may be advantageously added. In the obstinate irritative coughs following inflammatory affections which have apparently subsided, the fluid extract of eucalyptus is best given without other drug, in syrups of tolu or acacia, or in emulsion of oil (castor oil, olive oil, cod-liver oil, almond oil), as necessary, to disguise its taste or modify its action. The dose is about five drops for a child of two years."

CONGENITAL HYDROCEPHALUS WITHOUT ENLARGEMENT OF THE HEAD.

Dr. L. Emmett Holt (N. Y. Med. Jour., November 1, 1890) presented in Section in Pædiatrics, N. Y. Academy of Medicine, a brain removed from a child who had died at the age of three weeks, in which a very marked degree of hydrocephalus existed, the head, however, being of normal size. The lateral ventricles were much dilated, and contained six ounces of fluid. The brain outside was a mere shell. Spina bifida also existed. Death was caused by suppuration in the spina-bifida sac, which had extended upward along the whole cerebro-spinal axis. No operation had been performed.

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GYNÆCOLOGY.

BY WALTER B. CHASE, M.D.

ON DIFFERENTIAL DIAGNOSIS OF HYDROSALPINX.

Dr. Skene, at October, 1890, meeting of the Brooklyn Gynæcology Society, related a case of a female having the rational and physical symptoms of hydrosalpinx (the diagnosis having been reached independently by an eminent American gynæcologist) associated with disease of both ovaries.

Laparotomy was performed, the tubes and ovaries removed, but the tubes were not distended. After convalescence the physical symptoms of hydrosalpinx remained. On placing the patient in the knee-chest position, the condition simulating tubal distension disappeared, showing it was due to distended veins.

TREATMENT OF CANCER OF THE CERVIX UTERI BY HIGH AMPUTATION.

In a discussion on Dr. Coe's paper on "Limits of Vaginal Hysterectomy," in the proceedings of the New York Obstetric Society, ap-

pearing in *American Journal Obstetrics*, June, Dr. Hanks said he had become so accustomed to high amputation by scissors, knife, and cautery that he seldom resorted to vaginal hysterectomy. The results had been very satisfactory. He had seen many cases of malignant disease of uterus, and yet within five years only one patient had come under his individual care, in which all the good which could be accomplished would have been by Byrn's, Sims', or Baker's operation.

SECONDARY PERINEORRAPHY AT TIME OF A SUBSEQUENT LABOR.

Dr. Charles Jewett at the October meeting of the Brooklyn Gynecological Society, gave cases of the above operation.

The repair of a former injury to the pelvic floor may be done immediately after labor, when the patient is in favorable condition. Union takes place as kindly as in ordinary primary operations.

The patient's time is saved and the operation less formidable. Have done this in four instances, two in August last in which there was no tear during the last labor. In the other cases there was a slight flesh laceration. Here the old scar-tissue was removed and the whole perinæum restored, instead of simply suturing the new tear. The results were highly satisfactory.

[This new departure by Dr. Jewett, which promises so well, will be watched with interest until larger experience shall determine its proper status as a conservative operative procedure, both as regards results, and any dangers which might follow of the septic variety, particularly in these cases in which there was no injury to pelvic floor at time of last labor.—W. B. C.]

SECONDARY PERINEORRAPHY.

Under this head, Saurenhaus (*Centralblatt für Gynäkologie*, July 3, 1890), reported at a recent meeting of the Berlin Obstetric Society twenty-five cases in which he repaired laceration of perinæum at periods varying from five to twenty days after the original injury, with only two failures. The surfaces were freshened by the scissors or sharp spoon, and were united by a continuous catgut suture. In the discussion which followed the reading of the paper, the consensus of opinion was in favor of using the continuous catgut suture for the immediate repair of perineal lacerations. *Amer. Journal Med. Science*, Oct., 1890.

PERFORATION OF UTERUS WITH CURETTE.

(Phila. Obstet. Society, April 3, 1890). Dr. J. Hoffman reports case of perforation of uterus in a septic uterus following a six weeks' conception. Laparotomy was performed four hours afterward, which was followed by recovery.

A difference of opinion existed as to whether the accident was due to the curette, or to the forcible dilatation which preceded its use—which was a Molesworth's dilator.

In the discussion following Dr. Gooddell reported two cases of malignant diseases of endometrium, in which the curette penetrated the abdominal cavity, in which no serious consequences followed.

CATGUT IN ABDOMINAL SURGERY.

Dr. Robt. T. Morris (*Journal Gynæcology and Pædiatry*, Sept., 1890), discusses his experience with catgut. He regards it as superior to everything else both for suture and ligatures. He prepares it by placing it first in oil of juniper for a few days. He then immerses it in 95 per cent. alcohol and adds bichloride of mercury, four grains to the pint.

He uses three sizes of catgut, Nos. 9, 7 and 5, which are absorbed in about six, twelve and nineteen days respectively. He appends a table of 47 operations, catgut being used, in which he shows untimely absorption in two cases (both in integument); two were followed by mural abscess, and three by infection of catgut.

The two cases of infection were those in which dealers' catgut was used.

DISEASES OF THE SKIN.

BY SAMUEL SHERWELL, M.D.,

Clinical Professor of Dermatology, Long Island College Hospital; Attending Physician, Brooklyn Hospital; Surgeon to Skin and Throat Department, Brooklyn Eye and Ear Hospital.

ARISTOL.

Eichoff (*Monatsheft f. p. Dermat.*, 1890, x.) gives a very enthusiastic account of the virtues of this drug—a union of iodine and thymol, as is well known, first made by Messinger and Vorthnar, of Aachen; it is neither soluble in water nor alcohol, but fairly so in ethers and the fatty oils. He used it in parasitic diseases of the skin (both animal and vegetable), ulcers, eczemas, lupus, etc.; also in psoriasis recommends it, particularly on account of its not staining, as does chrysophanic acid, anthrarobin, etc. About the only exception he makes in praise of its action is in the chancroidal ulcer, in which, he says, either in finely powdered substance or by use of solutions, he has found little good effect. He thinks it preferable to iodoform, and very much more desirable, on account of its being odorless.

In a later article (*Deutsche med. Wochenschrift*, Nos. 28, 29) he comes about to the following conclusions, which, though positive enough, are somewhat more moderate in their claims, viz. :

1. That aristol is a medicament totally free from harmful properties.
2. It neither stains the skin nor the clothes of the patient.
3. That it is useless in the treatment of acute gonorrhœa, in chancroidal ulcerations, and in favus.
4. That it may be used with good effect in psoriasis and eczemas occasioned or accompanied by parasitic troubles, tinea tonsurans, and sycosis.
5. That it is a decidedly good remedy, and, as before said, an entirely harmless one. in the following diseases: Ulcers of the legs, syphilitic gumma, scrofuloderma, carcinomas of the skin, buboes, lupus vulgaris, and cases of gangrene, and in all of these, more particularly, when they have arrived at the ulcerative stages.

He has been sustained by some writers, as Dr. Alois Pollak, of Prague (*Therap. Monatsheft*, No. 7, 1890), who recommends a salve of aristol, *sapo viridis*, ether, and alcohol, for application in scrofulodermas and the like, who also used it in ulcers, etc., with good effect.

Dr. C. W. Allen, of New York (*Med. Record*, October 11, 1890, p. 404), in a paper read at the American Dermatological Association (1890), gives a moderately favorable report of the action of this drug. He had used it in many of the diseases already mentioned by Eichoff and others, and in some not, as in condylomata around anus, etc.; he had, however, thought it was useful in chancroids, as had Neisser, who recommends it in those affections, and in suppurating buboes. Under the critical discussion which followed the reading of the paper in the Society, the doctor was unable to make any great claim as to its efficacy in psoriasis, eczemas, parasitic diseases, etc.

Dr. Wm. F. Waugh, of Philadelphia (*Medical Times and Register*, September 20, 1890, p. 258), gives an exhaustive review of the literature of this drug up to that date, and as well gives cases of his own, in which he claims great success by means of its application, and consequently looks upon it with much favor. The cases themselves include endometritis, ulcerating carcinomas, gleet, etc.; he gives names and dates in his article of those having written on the subject, other than those before mentioned, as Drs. W. C. Wile, Shoemaker, Brocq, Schuster, Schirren, Lassar, Kriccicki (of Posen), Hughes (in Seifert's Clinic for Diseases of Nose and Throat, Würzburg), Gaudin, Soler y Buscalla, Rohrer, Rosenthal, etc.

(It seems astonishing, with all this review of favorable testimony, that the profession at large have not taken to this drug more kindly. Certainly, while all dermatologists, etc., have used it, and some much, we do not find any that are enthusiastic over it; in fact, we and they certainly believe that the earlier observers have been too sanguine in their claims. Personally we have used it in various ulcerative diseases,

both on the skin and on mucous membranes, as in ozæna, etc. (in which it has been highly recommended), without much effect—in fact, scarcely any, save that which could have been obtained by a relatively inert powdering, as of subcarbonate of bismuth, calamine, etc. We all know that these coverings are often sufficient in indolent ulcerations for good effect; the same thing obtains in condylomata and the like.

Most of the observers of the Dermatological Society of New York have arrived at about the same conclusions as those just expressed: that it is an over-rated drug, at least if we take the more favorable expressions of opinion as criterion.—S. S.)

PYOKTANIN.

Prof. J. Stilling, of Strasburg University (Merck's Bulletin, June, 1890, under the heading of Botanic and Bacteriological Experiments; also in *Therap. Monatsheft*, 1890, No. 6). The author in the above papers gives an enthusiastic (not to say extravagant) laudation of the virtues, actual and possible, of this new drug, which is obtained by the action of the ethyls and methyls on the colorific substances of the coal-tar groups (fuchsine and aniline): the favorite one seeming to be the blue or purple; the less active, the yellow.

He eulogizes them as being the most active of bactericides, and destroyers both of pus-formation, and its nocence, when formed. He gives numerous results of physiological experiments in bacteriology—all successful—and accounts also of success in various ailments attended with free pus-formation, more especially those of the eye. He dwells on the relative innocence of the remedy, and the ease with which results may be watched, and dosage graded, by amount of staining, etc.; and, in short, makes what, in the light of the experience of others, seem to be over-sanguine claims.

Only one observer, as far as our reading goes, corroborates these assertions to any degree, Dr. O. Petersen, of St. Petersburg (Wratsch, '90, No. 20), who has used pyoktanin in 48 cases, and claims good results, viz.:

Ulcus molle.....	20
Ulcus induratum.....	8
Ozæna from gumma.....	4
Hard gumma of palate.....	2
Gumma of epiglottis.....	1
Gumma of gluteal region.....	1
Ecthyma (syphilitic).....	1
Keratitic pannus.....	3
Keratitis and iridocyclitis.....	1
Gonorrhœal ophthalmia.....	1
Conjunctivitis.....	1
Wounds from circumcision.....	4

He says that healing followed in an astonishingly short time under pyoktanin; prefers it to iodoform, on account of its absence of odor, so that he now invariably substitutes it for that agent in his hospital practice.

Prof. Garrè and Dr. Trojes (Münch. med. Wochenschrift, 1890, No. 25) give an entirely different account of their experimental use.

By Garrè it was used in all possible cases when acute or chronic purulent conditions were present, without finding the least antipyrogenic virtues.

Dr. Trojes found it indeed to have a mild bactericidal power in solutions of 1-1000, but a very decidedly mild antipyrogenic effect.

They tried to limit the growth of staphylococci in agar-agar tube-cultivation, but found it very unsatisfactory in action, any inhibitory power it had rapidly passing away.

By inquiry among American dermatologists as to its action, we can find none among those who used it at all satisfied. (Those who had tried it had used it both in powdered substance and ten per cent. solution.) It seemed, according to the one who had experimented most, almost inert.

On further inquiry, among the ophthalmic staff of the Brooklyn Eye and Ear Hospital, about the same opinion was expressed; only one gentleman believing that, in some suppurative troubles of the ear, it had been possibly of benefit. The number of cases in which it had been used was considerable, probably over 200.

PHYSIOLOGY AND EXPERIMENTAL THERAPEUTICS.

BY GEORGE T. KEMP, PH. D.,

Associate Director of the Department of Physiology and Experimental Therapeutics,
Hoagland Laboratory, Brooklyn.

EXPERIMENTAL RESEARCHES ON LEAD POISONING.

The "Fortschritte der Medicine," 1890, p. 342, contains a review of an article by Prevost and Binet—"Recherches Experimentales sur l'Intoxication Saturnine"—in the "Revue Méd. de la Suisse Romande," 1889, No. 11, in which the authors, as the result of extensive experiments upon rabbits, rats, cats, guinea-pigs and dogs, have made the following observations.

Pieces of lead introduced under the skin or in the perineum, never produce poisoning, even after a long interval.

Intravenous injection of lead-peptonates usually produces rapid death.

Subcutaneous injections usually produce abscesses.

Chronic lead poisoning can only be produced by administering lead through the stomach. By mixing lead carbonate (Bleiweiss) with the

food and drink, he succeeded in producing chronic poisoning lasting several months, and in some cases over a year.

On animals treated thus the following observations were made :

Symptomatic.—Progressive emaciation, sometimes represented by a loss of one-third the animal's initial weight.

Anæmic, by decrease and alteration of the red blood-corpuscles (Poikilocytosis, leucocytosis).

Albuminuria usually slight and not present in all cases.

Nervous phenomena.—Paralyses, aphonia, loss of reflex, anæsthesias. Convulsions were rare and their origin doubtful. The paralyses disappeared upon discontinuing the giving of lead.

Anatomical.—Nephritis, with contraction, and, at times formation of renal cysts.

Fatty liver.—Pericarditis was fairly often present, and sometimes fatty degeneration of the heart walls. Degeneration of the peripheral nerves according to the type described by Gombault as the "Segmentary periaxial type." The spinal nerves were generally free from lead, as was found by Déjerine. The regeneration of the nerves could often be seen going hand in hand with the healing of the paralyses.

From analyses of the different organs for lead, Binet obtained the following results :

The lead accumulates, especially in the kidney. The kidneys contain more lead, the longer the course of poisoning. Lead may be found in the kidneys long after the poison has ceased to be administered (*Lange nachdem mit der Vergiftung aufgehört würde*).

The bones also were rich in lead, the metal appearing to be fixed in the mineral substance as a phosphate. The relation of the inorganic to the organic constituents of the bone is, therefore, not altered to any appreciable extent.

The liver generally contains but little lead in slow poisoning, but in acute poisoning the amount of lead in the liver may be considerable, but the lead is quickly eliminated from the liver and does not accumulate there as in the kidney.

In the muscles, spleen, nerve-centres, eyes, lungs, heart, pancreas, genitals and blood, the presence of lead was not constant, and the amount, when present, was always small.

In the young, born from lead-poisoned females, lead was present in only one instance.

In one rat there was a large ovarian cyst, which was very rich in lead, especially in its walls.

The urine contained, as a rule, little lead, hence its accumulation in the kidneys. The amount of lead in the urine increased when there was albuminuria.

The throwing-out of lead through the bile is considerable, hence the small amount of lead in the liver.

The amount of lead excreted in pilocarpin-saliva is very slight, or may even be *nil*.

The slowness of the excretion of lead, and the difficulty with which most of its salts are soluble, explains the length of time that it remains in the body.

Two animals, after a long continuance of lead-poisoning, were put on a treatment with potassium iodide. In spite of this, the kidneys, at the post mortem, yielded a large amount of lead. The same results were obtained after a treatment with salts of ammonia.

A NEW HEART-POISON.

A new heart-poison has lately been studied by Dr. Boehm of Leipzig (Ueber das Echujin, etc., Arch. f. Experiment. Path. und Pharm., vol. 26, p. 174). The plant from which it is derived is a beautiful flowering shrub found in the German possessions lately acquired in south-west Africa, and has been named by Schidz "Adenium Boehmianum." The natives call it "Echujá," and from its resinous sap, prepare an arrow poison. The alkaloid "Echujin" paralyzes the heart without affecting the peripheral endings of motor nerves. In kymograph-experiments there was no regular marked rise in blood pressure, as with digitalis. The respirations and heart beats are slowed. The drug acts slowly; sometimes its first marked effects, in rabbits, do not appear for 30 to 45 minutes.

On opening the thorax immediately after death the heart is found in the tightest systolic contraction.

MEDICAL JURISPRUDENCE.

THE LAW AND THE DOCTORS.—AND NOW THE UNDERTAKERS.

BY SIDNEY V. LOWELL.

In the volume of Court of Appeals Reports of this State, just published, there is a curious case relating to undertakers; and as physicians are so often succeeded by the former, this case may be of interest. The writer does not make this allusion in any invidious sense. Not even as J. Marion Sims did in his wonderfully interesting autobiography, in which, referring to the treatment of fevers by the physicians in the South in his youth, he grimly speaks of how "Death followed in the track of the physician."

There is something, by the way, to be remarked in this word "Undertaker." Its use is confined to the large cities I have noticed, or to certain localities. The more expressive words, "Funeral Director," being used elsewhere, or some similar words, expressing just what is meant. But "Undertaker" only suggests to those used to the word, what is meant, what, is to be undertaken.

I suppose that there is nothing more sadly interesting to an observing eye in that most quaint and interesting of our cities—New Orleans—than the different way in which this last provision for the body of man is attended to there. Of course, I mean on the "French side," as there is nothing particularly noticeable in the other parts of the city. The French fashion is there carried out of posting hand-bills giving notice of the death, referring specifically to the deceased in various ways, soliciting the sympathy of all acquainted with the family, and inviting attendance at the funeral. The funereal trappings and suits of woe are also the opposite of ours. White is the color, and gilded ornaments abound. All seems to express a passage to Paradise rather than burial in a tomb. To many this must seem best. To us the mental commentary is that the dignity of death seems not to have its due.

Well, to go back to our case. When General Grant died at Mount McGregor, his body was embalmed and the funeral offices attended to by a local undertaker at Saratoga. He was not paid by the family of the General. So far as is known to the public, it will be remembered, they paid for nothing connected with his final illness and death. His bill was for five hundred dollars. The *New York Sun* came forward and paid it. The *New York Times* published statements to the effect that the undertaker was about Mount McGregor at the time intoxicated, and that his charges were in the nature of blackmailing. A libel was brought against George Jones, the publisher of the *Times*, and the plaintiff recovered damages. The principal legal point of interest in the decision arises from the fact that the undertaker seemed to consider that in the case of a distinguished person, that it was proper to make a larger charge than in an ordinary case. A physician may, for instance, charge a wealthy person a large sum for an important or "nice" operation, much greater than if the patient were not in so good a pecuniary position. This was decided, by the way, in an interesting case of Dr. Olcott's some years ago. The undertaker seems to have thought his charge was but following on a similar line; for he gave no testimony to back it up, beyond showing what he did, other than to prove that the Federal Government had paid Prof. Sullivan, for similar services, the same sum. The court reprobate the doctrine, however, severely, that a higher charge could be made in the case of a distinguished person

than for another, and say "Such a proposition cannot be supported either in law or morals."

I remember a case where one of our local undertakers made a charge of \$1,500 in the case of a wealthy and well-known citizen, which, on remonstrance being made, he was only able to justify from similar reasons as in this case, and reduced his bill to \$500. The courts will, as shown, not countenance these things.

NEW BOOKS AND BOOK NOTICES.

All books received by the JOURNAL are deposited permanently in the Library of the Medical Society of the County of Kings.

PRACTICAL ELECTRICITY IN MEDICINE AND SURGERY. By G. A. Liebig, Jr., Ph. D., and George H. Rohé, M.D. 8vo. c., pp. 383. F. A. Davis, publisher, Philadelphia, 1890.

This timely book, on a subject which is at present attracting so much attention in the outside scientific world, will be eagerly read by those members of the profession on the *qui vive* to know what modern electrical progress is doing for medicine.

The authors, who are both experienced teachers in the city of Baltimore, have set forth in a concise way the fundamental principles which are involved in the application of electricity to medical and surgical practice.

The subject-matter of this volume has been divided into three parts, the first dealing with the electrical and magnetic apparatus likely to be of use to the physician, as well as the arrangement of cells for any given work, the construction and use of galvanometers, the storage-cell or accumulator, and the care of batteries.

Since the physician is adding the electric motor, the electric light, the telephone, the phonograph, etc., to his electrical armamentarium, the study of electrical apparatus has become more essential.

Part II. is devoted to the study of Electro-Physiology, Electro-Diagnosis, and a chapter on the various special appliances most useful in electro-therapeutic work.

Part III. is devoted to the study of Electro-Therapeutics. The methods by which electricity is made available for therapeutic purposes are described, followed by about one hundred pages devoted to the use of the agent as a remedy in various special diseases.

The work is profusely illustrated with over two hundred and fifty cuts and plates, and is confidently recommended to the student and practitioner as giving an intelligible account of the science of electricity and a trustworthy guide to its applications in the practice of medicine and surgery.

SPINAL CONCUSSION : Surgically considered as a Cause of Spinal Injury, and Neurologically Restricted to a Certain Symptom-Group, for which is Suggested the Designation Erichsen's Disease as One Form of the Traumatic Neuroses. By S. V. Clevenger, M.D. 8vo. c., pp. 359. F. A. Davis, publisher, London and Philadelphia, 1890.

Chicago, being a great railroad centre, has afforded Dr. Clevenger ample material for the investigation of this subject over which physicians and lawyers have bitterly contended in our courts for the past twenty years, and in this work, which will be of great value to the medical and legal professions, he reviews the subject with great thoroughness.

The author holds "that the spinal sympathetic nervous system is the main seat of disease, and that in consequence the cord functions are deranged, and this accounts for much, if not all, that has been hitherto unexplainable."

These views he bases on "recently-discovered symptomatology and on exclusion of previous errors in diagnosis, which would not, until this time, have enabled any such conclusion to have been reached."

He devotes a chapter to the important subject of electro-diagnosis, another to differential diagnosis, and a good deal of space to the pathology of the condition, to which subject the author has devoted special study, and takes new ground. "To John Erichsen, of London, belongs the credit of being the first to describe a group of symptoms, mainly nervous, that frequently occurred after a concussion of the spine, even though no demonstrable lesion was inferable ante-mortem, or discoverable post-mortem;" therefore, the author proposes the designation "Erichsen's disease" as a substitution for the various ambiguous and improper titles, which caused confusion, and confines "concussion of the spine" to the traumatic condition which may or may not cause, "Erichsen's disease."

The concluding chapter is devoted to "medico-legal considerations," in which the author "claims that it is the physician's duty to coach the attorney, in and out of court, whether he testify or not."

The work is neatly presented by the enterprising publisher, whose peculiar trade-mark is becoming a familiar decoration on the backs of books upon our shelves, and the book will find a permanent place in the hands of the medico-legal profession.

"THE MEDICAL NEWS VISITING LIST" FOR 1891, published by Lea Brothers & Co., of Philadelphia, is before us.

A Medical News visiting list has been our constant pocket companion since 188, and this edition is fully up to its predecessors. Besides the fifty pages of reading matter, containing all sorts of information which every busy physician has once acquired, but through disuse has allowed to become generalized, and a brief reference will render accurate, it contains two hundred blank pages of excellent thin paper, arranged for daily record of practice, various engagements, addresses, and memoranda.

A thumb-hole index enables us to readily refer to any of the divisions, without special search.

SCHEME OF THE ANTISEPTIC METHOD OF WOUND TREATMENT. By Dr. Albert Hoffa. Q., pamphl.

This scheme has been translated into English by Dr. Schachner, of Louisville. It states, in a very condensed form, about all that is known on this important subject, and would be very valuable for reference were it framed and hung on the wall of every operating-room.

A PRACTICAL TREATISE ON IMPOTENCE, STERILITY, AND ALLIED DISORDERS OF THE MALE SEXUAL ORGANS. By Samuel W. Gross, A.M., M.D., LL.D. Fourth Edition. Revised by F. R. Sturgis. O. c., pp. 173. Philadelphia: Lea Brothers & Co., 1890.

The fact that this treatise has reached a fourth edition is in itself proof that it has been appreciated by physicians. The additions and criticisms by Dr. Sturgis make this edition of greater value. We would commend this work to gynecologists who are too apt to explain all cases of sterility by some defect on the part of the weaker vessel, and to utterly ignore the possibility of this condition being due to functional or organic defects in the male generative organs. Dr. Gross states that after a thorough investigation of the subject he has come to the conclusion that in unfruitful marriages the husband is at fault in at least one instance in every six. This conclusion is supported by evidence contributed by Pagot, Kehler, Courty, Noeggerath, and others. So convinced is our author of the probability that the defect will be found in the husband, that he thinks the latter should be examined before even an inspection is made of the female organs of generation. There is no doubt, we think, that many a woman is slighted and depreciated at the hands of her husband for her inability to bear to him an heir, while, if the truth were known, she is the only one of the two whose generative organs are in a truly physiological condition. Physicians have it in their power,

in many instances, to remove this stigma, and oftentimes in so doing they may bring to light slight deficiencies in the husband which are so amenable to treatment as to make, what was formerly a very disagreeable and uncomfortable domestic life, a happy and a fruitful one.

DISEASES OF THE EYE. By Edward Nettleship, F.R.C.S. Fourth American for the Fifth English Edition. With a Chapter on Examination for Color Perception by William Thomson, M.D. D. c., 508 pp. Philadelphia: Lea Brothers & Co., 1890.

In the fifth English edition of this admirable manual the author has thoroughly revised the former editions, and has made such changes and additions as were demanded by the important advances made in ophthalmology; this is especially noticeable in the chapter on operations. The American publishers, in the fourth American edition, have left nothing undone to reproduce all that was desirable in the English edition. This treatise is, we think, by far the best text-book for students, as well as a most excellent book of reference for practitioners. The portion which deals with Color-Perception, from the pen of Dr. Thomson, enhances its value to a considerable extent.

A MANUAL OF MODERN SURGERY FOR THE USE OF STUDENTS AND PRACTITIONERS. By John B. Roberts, A.M., M.D. With 500 illustrations. O, sheep, pp. 800. Philadelphia: Lea Brothers & Co., 1890.

The completion of this manual as recently as September of the present year has enabled its author to carry out the object which he had in mind in writing it: "to give the profession, in a condensed form, the accepted doctrines and approved procedures of modern surgery." He is thoroughly in accord with the most pronounced believers in antiseptis. In the preparation of patients for operation he directs that the seat of operation should be rendered aseptic by shaving, and subsequent scrubbing of the skin with soap and water, followed by washing with sublimate solution, 1-1000. Especial attention should be given to the umbilicus and the folds of the skin about the groins, axillæ and toes, as the secretions, epidermis, and dirt which are retained there are full of bacteria. After the surgeon has thoroughly sterilized his hands, he must not put his hands into his pocket, or scratch his head or face, for fear of endangering the patient's life by the possible conveyance of a single bacterium into the wound. More extreme views on the subject of antiseptis it would be difficult to find. And yet if antiseptis is to be the principle adopted, Dr. Roberts is right in insisting upon the carrying into effect every detail, no matter how insignificant it may appear. Nowhere more than here is it true that the strength of the chain is no greater than its weakest link.

In discussing anæsthesia, the author advises the use of ether. He says: "In the production of general anæsthesia in surgery, ether is preferable to any other agent at present generally employed. Chloroform is much more dangerous. This is a sufficient cause for the abolition of its use. Its claimed advantages over ether are considerably overrated because of the improper methods in which ether is often given." While we agree with the author in the main, still we think the consensus of opinions of surgeons is that no one anæsthetic is to be relied upon to the exclusion of all others; that a choice is to be made according to the nature of the case to be operated upon. It would be hard to find an experienced surgeon, we think, who would be willing to "abolish" chloroform. That it is more dangerous than ether there can be no doubt, and that deaths result from its use which would not occur if ether were employed, we think is also true; but there are undoubtedly cases in which chloroform is the proper anæsthetic to be administered.

The reported experience of Dr. G. W. Brush, of Brooklyn, does not bear out the statement made by Dr. Roberts that "nitrous oxide is not a good anæsthetic for protracted operations." This experience has been published in the *JOURNAL*, and demonstrated that it is beyond doubt the safest anæsthetic we have, and that in operations lasting an hour and forty minutes it has been satisfactorily employed. The bulky apparatus and the cost of the gas are the two principal objections to its use. These should not stand in the way of its adoption, were it very superior to ether. but as yet surgeons do not feel that the danger in the use of the latter agent is so great as to demand a change.

Diseases and injuries of the uterus, ovary, and fallopian tubes occupy but five pages, and it is not surprising, therefore, to find these subjects touched upon only superficially; indeed, considering the small space devoted to them, the author has done remarkably well.

Taken as a whole, the book is all that it claims to be: "a practical work, giving the surgical principles and operative methods generally accepted and practised by the leading surgeons of the world at the present time."

PROGRESSIVE EXERCISES IN PRACTICAL CHEMISTRY. By Henry Leffmann, M.D., Ph.D., and William Beam, M.A. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1890.

This little volume, of 104 pages, contains the methods of laboratory instruction in inorganic chemistry employed in the Woman's Medical College and the Pennsylvania College of Dental Surgery. We are glad to note that formulæ and discussions of purely theoretical questions have been omitted, and that so much space has been given to a description of experiments safe and easy to perform. The manual is well adapted for use with any of the text-books on elementary chemistry.

THE LATIN GRAMMAR OF PHARMACY AND MEDICINE. By D. H. Robinson, Ph.D. With an introduction by L. E. Sayre, Ph.G. D. c. Philadelphia: P. Blakiston, Son & Co., 1890.

At the present day, when a knowledge of Latin is looked upon as an accomplishment rather than a necessity, even for professional men, such a book as this would seem to be a superfluity; and we therefore turn with interest to the preface to ascertain what the author's motives were in preparing the volume for which he asks the public favor. He certainly can speak *ex cathedra*, for he is the professor of Latin language and literature in the University of Kansas, and as such has had ample opportunities to study both the needs and the defects of students.

This book, he tells us, is the outgrowth of experience, being designed to meet the wants of the first-year pharmacy and medical students. "Considerable experience in teaching such students had clearly shown that those who had not studied Latin were at a great disadvantage compared with those who had acquired a fair knowledge of that language. They were found to be much slower in understanding the terminology and securing a firm grasp of the subjects presented." To remedy this, such students were required to study the usual Latin text-books; but although there was a great gain, still Dr. Robinson believed more could be done if a text-book specially adapted to these students should be written; and he accordingly set to work, and the volume before us is the result of his labors.

We are thoroughly in accord with the author in the opinions which he expresses as to the advantage possessed by the medical student who has a good knowledge of Latin over one who is ignorant of it, and we are much pleased with the text-book which he has provided for those who desire to prepare themselves to take up the study of medicine or pharmacy. We feel confident that many who are already in the profession could profitably spend considerable time in its perusal.

A COMPEND OF EQUINE ANATOMY AND PHYSIOLOGY. By William R. Ballou, M.D. With twenty-nine graphic illustrations. D. c. Philadelphia: P. Blakiston, Son & Co., 1890.

This is one of the well-known series of Quiz-Compend, and is designed both as a text-book and as a guide in the dissecting-room.

A COMPEND OF SURGERY FOR STUDENTS AND PHYSICIANS. By Orville Horwitz, B.S., M.D. D. c. Philadelphia: P. Blakiston, Son & Co., 1888.

This is the third edition of No. 9 of the Quiz-Compend.

MISCELLANEOUS.

OPIUM ADDICTION AS RELATED TO RENAL DISEASE.

A PRIZE OF FOUR HUNDRED DOLLARS.

With the object of advancing scientific study and settling a now mooted question, Dr. J. B. Mattison, of the Brooklyn Home for Habitue's, offers a prize of \$400 for the best paper on "Opium Addiction as Related to Renal Disease," based upon these queries:

Will the habitual use of opium, in any form, produce organic renal disease?

If so, what lesion is most likely?

What is the rationale?

The contest is to be open for two years from Dec. 1, 1890, to either sex, and any school or language.

The prize paper is to belong to the American Association for the Cure of Inebriety, and be published in the New York *Medical Record*, BROOKLYN MEDICAL JOURNAL, and *Journal of Inebriety*.

All other papers presented are to be published in some leading medical journal, as their authors may select.

All Papers to be in the possession of the Chairman of Award Committee, on, or before January 1, 1893.

The Committee of Award will consist of Dr. Alfred L. Loomis, Chairman; and Drs. H. C. Formad, Ezra H. Wilson, Geo. F. Shrady, and Jos. H. Raymond.

THE SANITARIAN.

The November number of *The Sanitarian* begins the publication of the Transactions of the American Climatological Association, held at Denver, Col., September 2, 3, and 4, 1890. These will, we understand, be continued throughout the coming year.





